DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 21-107830-LO

Project Name/Address: East Base Yard Lighting / 1975 124th Avenue NE

Planner: Drew Folsom 425-452-4441
dfolsom@bellevuewa.gov

Minimum Comment Period: June 24th, 2021

Materials included in this Notice:

- ☑ Blue Bulletin
- ☑ Checklist
- ☑ Vicinity Map
- ☑ Plans
- ☐ Other:

OTHERS TO RECEIVE THIS DOCUMENT:

- ☑ State Department of Fish and Wildlife
- ☑ State Department of Ecology, Shoreline Planner N.W. Region
- ☑ Army Corps of Engineers
- ☑ Attorney General
- ☑ Muckleshoot Indian Tribe

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. **Name of proposed project, if applicable**: East Base Yard Lighting Replacement Project and Next Generation Wireless (NGW) Project

2. **Name of applicant**: King County Metro Transit (Metro)

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3. **Address and phone number of applicant and contact person**:

Lawrence Chung,
Transit Environmental Planner
(206) 263-5504
201 South Jackson St.,
MS KSC-TR-0431
Seattle, WA 98104-3856

4. **Date checklist prepared:** 04/15/2021

5. **Agency requesting checklist**: City of Bellevue

6. **Proposed timing or schedule (including phasing, if applicable):**

The project is in final design. Permits are being obtained and construction is expected in the latter part of 2021.

7**. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

There are no plans for future additions, expansion, or further activity related to or connected with this proposal.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

- Critical Areas Report
- Geotechnical Report
- Washington State Department of Ecology (Ecology) Facility/Site Index

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain**.

A related project to replace light fixtures and a substandard light pole on the interior of the site is currently slated for construction in February 2021 on East Base.

There are three applications pending governmental approval in and adjacent to East Base: 1) TDC NRV Battery Infrastructure Project on East Base, 2) Metro East Base - Pavement Replacement Project, and 3) 124th Avenue NE Corridor Project by City of Bellevue.

<u>TDC NRV Battery Infrastructure Project on East Base</u>
The scope of work for this project occurs in the southwest portion of the East Base employee parking lot, as well as in the southeast portion of the bus yard immediately outside the vehicle maintenance and operations building. At the western end of the cap island, situated between two parking aisles in the employee parking lot, six pedestal-mounted electric vehicle charger stations and a transformer will be installed. Each station will provide outlets for two cars, for a total of 12 charging outlets.

<u>Metro East Base - Pavement Replacement Project</u>
The scope of work for this project includes pavement maintenance that removes and replaces 2,250 square feet of existing impervious area. The project involves removing the 14-inch-thick Hot Mix Asphalt area and replacing it with 10-inch-concrete pavement sections with reconstructed curbs and

gutters. One 14-inch-diameter fir tree in the adjacent landscape area will be removed. Site elements affected by construction activities include, but are not limited to, asphalt and landscaped areas. Existing utility systems will be restored to their original condition or better and remaining adjacent existing trees will remain and will be protected during construction work.

124th Avenue NE Corridor Project by City of Bellevue

This project is initiated by City of Bellevue (the city); Metro is reviewing the scope of work and is in negotiations with the city. The scope of work includes, but is not limited to, replacing and upgrading the culvert on 124th Avenue NE adjacent to the East Base, thereby raising 124th Avenue NE by approximately 8 feet. East Base driveways will need to be rebuilt/sloped (+/- min 8% slope grade to be determined/finalized) to meet the new elevation of 124th Avenue NE. The work will remove a portion of the existing parking area in East Base. The regrading work will remove adjacent existing trees.

10. **List any government approvals or permits that will be needed for your proposal, if known**.

- City of Bellevue critical areas land use permit
- City of Bellevue clearing and grading permit
- City of Bellevue electrical permit

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

Metro is proposing the East Base Yard Lighting Replacement Project (Lighting Project) at East Base to improve lighting throughout the yard. The Lighting Project is needed to enhance worker safety and comply with Washington State Department of Labor and Industries (L&I) light level requirements because the current lighting is out of date with current standards. The current lighting system was deemed inadequate under L&I light level requirements. Washington State requires an average of 3.0 foot-candle (fc) 30 inches above surface level with no single light measurement falling below 1.5 fc in the averaged area (Washington Administrative Code [WAC] 296.88-210). Currently, the East Base Yard has an average light level of 1.73 fc with a minimum single light measurement of 0.4 fc, which is below Washington State L&I requirements (Reynolds pers. comm.). The Lighting Project goal is to meet light level and uniformity requirements while also reducing light pollution and glare as established under WAC 296-800-210.

To increase construction efficiency, the East Base Next Generation Wireless (NGW) Project (NGW Project) would occur in parallel with the Lighting Project. In 2009, King County Metro installed a Cisco 4.9 gigahertz (GHz) wireless network as part of its On-Board System Communication Center System, which allows bus computers to transmit or upload daily data, such as passenger counts, fare transactions, ORCA card reloads, fare tables, on-board schedules, stop announcements, and other on-board data configuration. In 2018, Cisco discontinued support of this hardware. The goal of the NGW Project is to upgrade the current 4.9 GHz network to a 5 GHz wireless network. Upon completion of the NGW Project, communication and data integration of bus and operations office computer systems would be improved.

Construction and operation of both projects (Lighting Project and NGW Project) would occur within a 391,654-square-foot area in the western portion of the East Base (project site). The bus base at the project site was originally established in 1977 and contains the bus parking area,

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vehicle maintenance and operations building, and fuel and wash building. The project site is located at 1975 124th Avenue NE, Bellevue, WA 98005 within Section 28, Township 25N, Range 5E; central coordinates 47.627614, -122.178819. The King County property parcel number is 2825059026. The project site is in a highly developed setting (Figures 1 and 2).

Currently, 14 floodlights (poles with light fixtures) that are part of this Lighting Project illuminate the bus parking lot, vehicle maintenance and operations building exterior, and the exterior of the fuel and wash building. The fixtures sit atop 30-, 40- or 60-foot-high poles set in concrete piles. The floodlights are located along the outer perimeter of the site, west of the fuel and wash building, within a landscaped island east of the vehicle maintenance and operations building, and south of the hostler shack (Appendix A, Yard Lighting Plan, Sheet 3 of 37).

The Lighting Project would replace eight existing floodlights along the perimeter (P1–P5, P8, P13, and P14). Three new floodlights (N1–N3) would be installed—two on the northern boundary and one on the western boundary of the site (Appendix A, Yard Lighting Plan Sheet, 3 of 37). Five existing poles would have new replacement light fixtures with light-emitting diode (LED) lights having similar to existing foot candles and wattages: west of the fuel and wash building (P6, P7) and in a landscaped island (P10–P12). The existing P12 has two light fixtures, a 200-watt (W) LED and 600W LED, which would be replaced with a single 600W LED. The existing 400W LED light installed on P8 would be relocated to P16 (Table 1).

New pole foundations would be approximately 36 inches in diameter and roughly 12 feet deep (Appendix A, Yard Lighting Plan, Sheet 27 of 37). New conduit and junction boxes would be installed to route power to the light poles. Most conduits would be installed a maximum of 5 feet below grade using either trenching or directional boring. The maximum excavation depth of all direction borings is 12 feet, which is located at the southwest corner of the site (Appendix A, Yard Lighting Plan, Sheet 18 of 37). Trenching would disturb approximately 6,628 square feet of surface area and 33,140 cubic feet of ground materials. Total trenching includes the 40 cubic feet required for NGW cabinet discussed below. Trenching would take place within landscaping strips dominated by grass north of the hostler shack, along the north and south boundaries, and within gravel to the west boundary. Existing grade or elevation would be restored to match existing conditions.

New project elements – light pole foundations, junction boxes, and the NGW cabinet concrete pad – along with trenching and directional boring soil pits would result in approximately 35,927 cubic feet, or 7,029 square feet, of ground disturbance during construction. This ground disturbance total is conservative since it assumes a depth of five feet for all trenching. Roughly 170 square feet of new hard surfaces from the light pole foundations, junction boxes, and the NGW cabinet concrete pad would be present upon completion of the project.

A total of 285 linear feet of directional boring under asphalt or concrete panels would occur in three areas, and they are: 1) along approximately 85 feet of asphalt between the south boundary, near P13, and vehicle maintenance and operations building; 2) 10 feet between the existing JB22 and the proposed JB22; and 3) along 190 feet in the southwest corner of the project area from the proposed JB15 diagonal to the proposed JB17 (Appendix A, Yard Lighting Plan, Sheets 18-20, and 24 of 37).

The project footprints would remain above the ordinary high water mark (OHWM) of the West Tributary of Kelsey Creek (West Tributary) and outside the wetland boundary. The project footprints would also be within the toe of steep slope along the south boundary and top of a steep slope along the north boundary (Figures 3 through 5).

All updates of the existing, new, and replacement floodlights would have Musco Total Light Control fixtures. Seven of the 8 replacement floodlights (P1-P5, P13-P14) would have light

fixtures changed from the current 600W LED lights to 400W LED lights. The new floodlights (N1–N3) would have 400W LED lights installed. Floodlight poles P6, P7, and P10–P12 would have updated light fixtures with new LED bulbs similar to the existing wattages. However, P12—which currently uses two light fixtures, a 200 W LED and 600W LED—would be replaced with a single 600W LED. The existing 200W LED light would be removed and would not be replaced. Floodlight pole P8's current 400W LED light would be replaced with another LED light of the same wattage. The existing 400W LED light installed on P8 would be moved and added to P16, which currently has a single 200W LED. P9 and P15 are outside the scope of this project. Please see the table below.

Table 1. East Base Light Project Existing and Proposed Floodlight Schedule

EXISTING FLOODLIGHT POLE SCHEDULE			
POLE	HEIGHT	FLOODLIGHTS	FLOODLIGHT WATTAGE
P1	60'–0"	2	600W
P2	60'–0"	1	600W
P3	60'–0"	2	600W
P4	60'–0"	2	600W
P5	60'–0"	1	600W
P6	30'–0"	2	50W
P7	30'–0"	2	50W
P8	40'–0"	1	400W
P9	40'–0"	3	(2)400W, (1)200W
P10	30'–0"	1	200W
P11	30'–0"	1	200W
P12	60'–0"	2	(1)600W, (1)200W
P13	60'–0"	2	600W
P14	40'–0"	2	600W
P15	60'–0"	7	400W
P16	30'–0"	1	200W

FLOODLIGHT POLE SCHEDULE			
POLE	HEIGHT	FLOODLIGHTS	FLOODLIGHT WATTAGE
P1	60'–0"	4	400W
P2	60'–0"	4	400W
P3	60'–0"	3	400W
P4	60'–0"	3	400W
P5	60'–0"	3	400W
P6	30'–0"	2	50W
P7	30'–0"	2	50W
P8	40'–0"	1	400W
P9	40'–0"	2	400W
P10	30'–0"	1	200W
P11	30'–0"	1	200W
P12	60'–0"	1	600W
P13	60'–0"	3	400W
P14	40'–0"	3	400W
P15	60'–0"	7	400W
P16	30'–0"	2	(1)200W, (1)400W
N1	60'–0"	4	400W
N2	60'–0"	4	400W
N3	60'–0"	4	400W

After implementation of the Lighting Project, the average light level would be raised to 4.74 fc with the minimum single light measurement, 30 inches above surface level, being 1.6 fc. This would be a 3.01-fc net gain average across East Base (Reynolds pers. comm. 2020).

Field measurements would be taken to verify required light levels are met. If requirements are not met, King County Metro would evaluate how to adapt/readjust light fixtures to meet requirements. Upon completion of the Lighting Project, the East Base yard lighting system would provide increased safety and security, improved controllability of lights, and reduced glare and light pollution to surrounding areas.

The NGW Project would require installing a NGW cabinet on top of a concrete pad and two surface bollards. The surface bollards would protect the NGW cabinet from bus traffic. The NGW cabinet would measure 31 inches long by 37 inches wide. The supporting concrete pad would measure up to 6.1 feet long by 3.7 feet wide and would be buried approximately 3.5 feet below ground surface (bgs). The area below the concrete pad would be over excavated to a depth of 6 inches, compacted, and backfilled with crushed rock. Installation of the supporting concrete pad would total approximately 79 cubic feet of ground disturbance, discussed above, during construction. Up to three underground 1- to 2-inch conduits may be needed to connect the NGW cabinet to the adjacent existing monitoring station and the adjacent existing handhole (Appendix A, Yard Lighting Plan, Sheet 25 of 37). This could result in up to 40 cubic feet of ground disturbance from trenching during conduit installation, discussed above. A pole with a 1.5" diameter will be used to secure the placement of Cisco wireless access point

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number 1 (AP1). The pole is an existing pole attached to the southwest corner of the hostler shack, and thus no new ground impact would be created. All existing grade or elevation would be restored to match existing conditions.

Lastly, 15 new Cisco wireless access points (APs) would also be installed throughout the East Base as part of the NGW Project. All APs would be attached to floodlights, to an existing pole, or to existing buildings and would have no ground impact:

- Four APs on floodlights P3, P4, and P13: one in the south and three along the north boundary.
- One AP on an existing pole near the hostler shack.
- Eight APs on the operations and maintenance building: seven on the exterior and one in the interior.
- Two APs on the western side of the fuel and wash building.

Of the eight APs on the operations and maintenance building, six would be directional and mounted on the exterior northern wall; one would be omni-directional and mounted on the exterior southwest corner; and one would be omni-directional within the mid-western portion of the building. APs mounted on northern floodlight poles and fuel and wash building would be directional. The APs on the southern floodlight pole and pole near the hostler shack would be omni-directional. The APs would be between 12 and 14 feet high, as measured from the bottom of the antenna (Appendix A, NGW Plan Drawing, Sheet 4 and 21 of 21). Upon completion of the NGW Project, communication and data integration of bus and operations office computer systems would be improved.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

Street address: 1975 124th Avenue NE, Bellevue, WA 98005

King County property parcel number: 2825059026

Legal description: T25N, R05E, NE and SE 1/4 of S28

B. Environmental Elements [HELP]

a. *Earth* [help]

a. **General description of the site:**

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. **What is the steepest slope on the site (approximate percent slope)?**

40% is the steepest slope within the project site.

c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any**

agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The project site has two mapped soil units (Figure 6). Soil Unit Sk, Seattle Muck, is mapped in the northern portion of the project site, along the West Tributary. This soil is found in depressions and formed from grassy organic material. It is frequently flooded, poorly drained, and considered hydric. The southern portion of the project site is mapped as AmC, Arents, Alderwood material, 6% to 15% slopes. This soil is formed from basal till and found on glacial till plains. This soil is not considered hydric. Historically, the site has been cut along the southern portion and filled in the north, creating a diagonal transition from a glacial till/outwash in the southeast to fill in the northwest (Landau 2001). Neither soil is mapped as farmland of significance by the Natural Resources Conservation Service and neither are considered to have long-term commercial significance.

d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

Based on public sources and private geologic reports, there is no indication or history of unstable soils within the immediate vicinity of the project site.

e. **Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.**

Trenching for conduit replacement/installation, junction box installation, and excavation for light pole concrete footings would be the main activities and would require soil disturbance (Figure 4). A total of approximately 7,029 square feet of surface area and 35,927 cubic feet of ground materials would be disturbed by trenching to install all new conduits and installation of light pole foundations, junction boxes, and the NGW cabinet concrete pad. Approximately 79 cubic feet of ground, included in above totals, would be disturbed during installation of the 6.1-foot-long by 3.7-foot-wide NGW cabinet concrete pad, which would be buried roughly 3.5 feet below ground surface (bgs). The area below the concrete pad would be over excavated to a depth of 6 inches, compacted, and backfilled with crushed rock. Up to three underground 1- to 2-inch conduits may be needed to connect the NGW cabinet to the adjacent existing monitoring station and the adjacent existing handhole, which could result in up to 40 cubic feet of ground disturbance (Appendix A, Yard Lighting Plan, Sheet 25 of 37). Trenching for these underground conduits is included in the above ground disturbance totals. Existing grade that is disturbed to install conduits or the concrete pad would be restored to match existing conditions. All other soil materials would be reused in reburial of the electric conduit systems.

f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe**.

During construction, clearing, grading, excavating, soil stockpiling, and other construction activities that would temporarily remove vegetation or reduce soil stability could result in erosion. Chance of significant erosion risk is low given that most soil disturbance will occur on a slight slope within fill material.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings).

About 80% of the site is currently covered with impervious surfaces. The amount of new impervious surface from junction box, light pole, and the new NGW cabinet concrete pad installations would total approximately 173 square feet (129 square feet from 25 new junction boxes, 21 square feet due to 3 new poles, and 23 square feet due to the new NGW cabinet concrete pad). This is 0.044% of the total area of the project site (based on the 391,654-square-foot western portion of the East

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Base property). This does not include the demolition of handholes/pullboxes, which would decrease the amount of impervious surfaces, though only slightly (Figure 4).

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Project-specific Stormwater Pollution Prevention Plans (SWPPPs) will be prepared. Best Management Practices (BMPs) identified in the SWPPP will be followed to control the risk of erosion. In addition, existing vegetation will be preserved to the extent practicable. These measures would reduce or control erosion that might otherwise occur during ground disturbing activities. In addition, a total of 285 linear feet of directional boring under asphalt or concrete panels would occur in three areas to reduce ground disturbance: 1) approximately 85 feet between the south boundary, near P13, and vehicle maintenance and operations building; 2) 10 feet between the existing JB22 and the proposed JB22; and 3) 190 feet in the southwest corner of the project area from the proposed JB15 diagonal to the proposed JB17 (Appendix A, Yard Lighting Plan, Sheets 18-20, and 24 of 37). The directional bore between the south boundary, near P13, and vehicle maintenance and operations building would have a maximum depth below ground surface (bgs) of 6 feet (Appendix A, Yard Lighting Plan, Sheet 24 of 37). The directional bore between the existing JB22 and the proposed JB22 would have an approximate maximum depth bgs of 2 feet (Appendix A, Yard Lighting Plan, Sheet 19 of 37). The directional bore located at the southwest corner of the site would have a maximum depth bgs of 12 feet (Appendix A, Yard Lighting Plan, Sheet 18 of 37).

2. Air [help]

a. **What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known**.

Emissions from construction vehicles and equipment may temporarily affect local air quality during construction of the projects. The emission quantities have not been estimated; however, they are not expected to exceed local emissions standards.

Fugitive dust emissions may also occur as a result of clearing, excavating, and other construction activities. Potential for fugitive dust would be higher during dry, warm weather conditions when wind and construction equipment create more dust.

Upon completion of project construction for each project, there would be no project-related air emissions. Vehicular emissions would not increase during operation of the projects.

b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

No off-site sources of emissions or odors are anticipated to affect the project proposals.

c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

Air quality impacts would be temporary and limited to the period of construction. Construction crews would be required to implement measures to minimize impacts on air quality, including (but not limited to):

- Covering loads of excavated materials
- Cleaning vehicles and equipment prior to leaving the construction area
- Installing and maintaining construction area entrances and exits
- Removing soil deposited on public lands
- Performing proper vehicle maintenance

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3. Water [help]

a. **Surface Water**: [help]

1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into**.

Yes. The West Tributary is a perennial stream that runs adjacent to the eastern and northern extent of the project site. In addition to the creek, an associated forested wetland was identified immediately adjacent to the eastern and northern extent of the project site during the critical area investigation (Figure 3).

The West Tributary has been identified as a class F stream or fish bearing stream by the City of Bellevue and King County. The identified, seasonally flooded forested wetland is a Category III wetland with a habitat score of 5. The project site lies within the Kelsey Creek Basin, Lake Washington Watershed (WRIA) 8, State Stream #08-0259.

2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans**.

Yes. Seven existing floodlights are within a critical area buffer or top of bank buffer for the West Tributary and/or wetland. Two of the three new floodlights are proposed to be within the critical area buffer or top of bank buffer for the West Tributary, and/or wetland. The projects were designed to avoid any work below the OHWM of the West Tributary. Most of the project site is located within 200 feet of the West Tributary. No in-water work is needed to execute the projects.

3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material**.

No amount of fill, dredge, or discharge material would be placed in or removed from surface water, wetlands, or waterways. The project footprints would remain above the OHWM and outside the wetland boundary.

4) **Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

No, the projects would not require any surface water withdrawals or diversions.

5) **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

No, the proposed projects do not lie within the 100-year floodplain.

6) **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

The projects would not discharge any waste materials to surface waters.

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b. **Ground Water**: [help]

1) **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known**.

The projects would not withdraw groundwater from a well for drinking water or other purposes. The projects would not discharge water to groundwater.

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve**.

The projects would not discharge waste material into the ground from septic tanks or other sources.

c. **Water runoff (including stormwater):**

1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Runoff, including stormwater, would continue to be collected via storm drains onsite. No additional stormwater treatment facilities are proposed.

2) **Could waste materials enter ground or surface waters? If so, generally describe**.

Groundwater, estimated to be approximately 10 feet below ground surface (bgs) in some project areas, may be encountered during pole installation. There is a risk that groundwater quality may be impaired due to release or exposure to gasoline, oil, hydraulic fluids, and related materials from use and operation of construction equipment.

3) **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

No, the projects would not alter or otherwise affect drainage patterns in the vicinity of the site.

d. **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

Project-specific SWPPPs will be developed that describe erosion and sediment control guidelines along with temporary and permanent erosion and sediment control measures. The SWPPPs will contain various measures to reduce or control any groundwater, stormwater and drainage pattern impacts. In addition, per the SWPPPs control de-watering measure, any encountered groundwater will be removed using a vacuum truck and taken to a permitted facility for treatment and disposal.

4. Plants [help]

a. **Check the types of vegetation found on the site**:

__X__ deciduous tree: alder, maple, aspen, other: Pacific Madrone, English Hawthorn

__X_evergreen tree: fir, cedar, pine, other
__X_shrubs
__X_grass
_____pasture
_____crop or grain
_____ Orchards, vineyards or other permanent crops.
__X_ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other: Common rush
__X_water plants: water lily, eelgrass, milfoil, other: Duckweed (*Lemna* sp.)
_____other types of vegetation

b. **What kind and amount of vegetation will be removed or altered?**

Existing vegetation would be protected to the extent possible. Ground disturbance would involve excavation for light pole bases, trenching for electrical conduit, and excavation for the NGW cabinet concrete pad. The majority of excavation would occur in previously disturbed areas (ornamental grass covered banks) or beneath currently covered impervious surfaces.

c. **List threatened and endangered species known to be on or near the site**.

No special-status, rare, or sensitive plant species have been documented within or adjacent to the project site (Washington Department of Natural Resources 2019).

d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Minimal revegetation would be required following the completed projects since the installation and replacement of the light poles would occur in previously disturbed areas that are mostly covered in grass. When the construction is completed, the contractor will reseed disturbed pervious areas with grass and restore the disturbed impervious areas to preconstruction conditions.

Additional possible available measures may include planting native shrubs and trees. These measures would provide a habitat lift along the riparian corridor and would shade the creek in the summer, reducing creek temperature and improving aquatic habitat. Removal of invasive species, such as Himalayan blackberry (*Rubus armeniacus*), reed canarygrass (*Phalaris arundinacea*), and English ivy (*Hedera helix*), along the banks of the West Tributary would also enhance vegetation within the project site.

e. **List all noxious weeds and invasive species known to be on or near the site.**

According to the Washington State Noxious Weed Control Board list (2020), the project site contains the following noxious weeds: Himalayan blackberry, Scotch broom (*Cytisus scoparius*), English ivy,, nonnative cattail species (Typha spp.), English hawthorn (*Crataegus monogyna*), reed canarygrass.

5. Animals [help]

a. **List any birds and other animals which have been observed on or near the site or are known to be on or near the site**.

Examples include:

birds: hawk, heron, eagle, songbirds, other: mallard
mammals: deer, bear, elk, beaver, other: beaver sign
fish: bass, salmon, trout, herring, shellfish, other _____

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b. **List any threatened and endangered species known to be on or near the site**.

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat Species (2020) map documents resident coastal cutthroat trout (*Oncorhynchus clarki*) occurring within and migrating through the project site. WDFW SalmonScape (2020) also documents Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), and sockeye salmon (*Oncorhynchus nerka*) accessible habitat in the West Tributary. Though the 2016 West Tributary Habitat Assessment also determined the tributary to be appropriate fish habitat, it stated there was no spawning habitat along the reach within the project site and habitat quality suffered from dense reed canary grass (Tetra Tech 2016). Finally, Ecology's Puget Sound Watershed Characterization Project (2019) notes the watershed basin is important for local salmonid habitat but has poor quality wetland, floodplain, and terrestrial habitats for other wildlife.

c. **Is the site part of a migration route? If so, explain.**

The project site is located along the Pacific Flyway migration route for birds. Since no riparian vegetation would be removed for these projects, impacts on migrating birds are unlikely.

d. **Proposed measures to preserve or enhance wildlife, if any:**

Construction activities have been sited to avoid work in or around jurisdictional waters to protect existing resources.

e. **List any invasive animal species known to be on or near the site.**

The Kelsey Creek Basin is infested with the New Zealand Mud Snail (*Potamopyrgus antipodarum*). Though the species has yet to be detected in the onsite reach of Kelsey Creek, they have been detected in areas of Kelsey Creek that flow into this tributary.

6. Energy and Natural Resources [help]

a. **What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

The Lighting Project would require electricity to power the lighting, while the NGW Project would require electricity to power the NGW cabinet and Wireless Access Points (APs).

b. **Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

The projects would not affect any solar energy uses on adjacent properties.

c. **What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

Energy efficient lighting is an integral part of the finished Lighting project design. The original 600W LED lights at the East Base would be replaced with 400W LED lights consisting of various distribution types and floodlights.

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7. Environmental Health [help]

a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Ecology's Facility/Site index (2020a) indicates the East Base fuel and wash building has most recently been documented as a Hazardous Waste Generator, an Interaction Name applied to any facility that produces any quantity of hazardous waste. The last interaction for hazardous waste generation with Ecology was dated December 31, 2011, with no interactions recorded for the last 9 years. The fuel and wash building was also documented for Hazardous Waste Management Activity—a facility that is required to have a state or U.S. Environmental Protection Agency identification but does not generate any hazardous waste—with the most recent record dating from December 31, 2010 through the end of 2011 (Appendix B; Ecology 2020a, 2020b). Based on the date of the interactions and apparent isolation of waste generation, there is a low risk of encountering any environmental health hazards during construction and operation of the proposed projects. Best management practices will be used to limit and isolate exposure to environmental health hazards during project construction.

1) **Describe any known or possible contamination at the site from present or past uses.**

Common hazardous wastes related to fuel and wash operations include fuel, used shop towels, aerosol cans, batteries, solvents, and possibly used oil. The Ecology's Facility/Site index noted a historic leaking underground storage tank in 1988. From January 1, 1991 to August 1, 2002, East Base was reported to Ecology as a Hazardous Waste Planner - a facility generating more than 2,640 pounds of hazardous waste per year. In 1992, East Base reported to Ecology for storing between 10,000 to 500 pounds of hazardous chemicals per year. Also in 1992, East Base obtained a general permit to discharge contaminated stormwater into state waters. In October 1996, East Base entered into independent cleanup with Ecology with the final enforcement at the end of August 2004. Since that time, East Base has interacted with Ecology as a Hazardous Waste Generator and Hazardous Waste Management Activity, as noted above (Appendix B; Ecology 2020a, 2020b).

2) **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity**.

No hazardous chemicals or current conditions documented within East Base Yard would affect project development or design. The closest demolition and trenching would be near the northeast corner of the fuel and wash building (Appendix A, Yard Lighting Plan Sheets 3 and 14 of 37).

3) **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project**.

The use and operation of construction equipment creates typical risks of exposure to gasoline, oil, hydraulic fluids, and related materials by accident. Equipment would be refueled in a designated area and appropriate containment measures would be implemented in accordance with King County standard construction specifications.

Operations would not generate or require any use or storage of toxic or hazardous chemicals over the life of the projects.

4) **Describe special emergency services that might be required**.

No special emergency services would be required by the projects. Construction would occur in a highly urbanized area where emergency services are readily available and entrance to the project site is easily accessed should these services be needed.

5) **Proposed measures to reduce or control environmental health hazards, if any**:

The contractor would prepare a detailed Spill Prevention Control and Countermeasures Plan, as necessary, which would identify all of the contingencies in the event of an accidental spill of hazardous materials. Equipment would be refueled in a designated area, with absorbent pads in place and spill containment equipment present to reduce the potential for contaminants to reach the water should any sort of accidental spill or leakage occur. All heavy equipment would be inspected prior to operating each day during construction.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise sources consist primarily of traffic and industrial activities near and at the project site. None of these existing sources of noise would affect the projects.

2) **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site**.

Construction noise would be temporary and result from the use of vehicles and equipment. Construction noise from both projects would occur during the regularly permitted hours for construction within the city limits of Bellevue outlined in the Bellevue City Code (BCC 9.18).

3) **Proposed measures to reduce or control noise impacts, if any:**

Short-term increases in noise would be limited to the construction period. To minimize noise impacts on the surrounding land uses, construction activities would be conducted during daytime hours as outlined by Bellevue City Code (BCC 9.18).

8. Land and Shoreline Use [help]

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe**.

The project site is the East Base Facility for King County's Metro Department of Transportation.

The surrounding parcels are a mixture of commercial, business, and industrial uses with residential properties farther to the north and west.

The projects would not affect current land uses on nearby or adjacent properties.

b. **Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands**

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have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The project site has not been used as working farmlands or working forest lands. The project site is in an industrialized area of Bellevue that is highly built out.

1) **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how**:

There are no working farms or forest land in the area.

c. **Describe any structures on the site**.

The project site has two large buildings onsite. One building contains office space and 12 bays for the maintenance of a fleet of transit buses. The other building is used for cleaning and fueling the buses.

d. **Will any structures be demolished? If so, what?**

No habitable structures would be demolished as a result of the projects.

e. **What is the current zoning classification of the site?**

The project site is currently zoned as BR-OR-2 (Bellevue Redmond Office Residential).

f. **What is the current comprehensive plan designation of the site?**

The designation is Mixed Use.

g. **If applicable, what is the current shoreline master program designation of the site?**

No part of the site is within any designated shorelines.

h. **Has any part of the site been classified as a critical area by the city or county? If so, specify.**

Yes. The West Tributary is a designated critical area and runs along the north property boundary of East Base.

i. **Approximately how many people would reside or work in the completed project?**

The Lighting and NGW Projects would not result in an increase in staff.

j. **Approximately how many people would the completed project displace?**

The projects would not displace any people.

k. **Proposed measures to avoid or reduce displacement impacts, if any:**

No measures are proposed because no impacts would occur.

L. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

The projects would not change any land uses; no measures are proposed.

m. **Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**

There are no nearby agricultural or forest lands of long-term commercial significance near the project site; no measures are proposed.

9. Housing [help]

a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing**.

No housing units would be provided.

b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

No housing units would be eliminated.

c. **Proposed measures to reduce or control housing impacts, if any:**

The projects would not result in housing impacts; no measures are proposed.

10. Aesthetics [help]

a. **What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The tallest structure would be a floodlight which would be 60 feet. The principal exterior building material for the poles and fixtures would be steel.

b. **What views in the immediate vicinity would be altered or obstructed?**

No views in the immediate vicinity would be altered or obstructed.

b. **Proposed measures to reduce or control aesthetic impacts, if any:**

The projects would not alter the aesthetics of the current site use; no measures to reduce or control aesthetic impacts are proposed.

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11. Light and Glare [help]

a. **What type of light or glare will the proposal produce? What time of day would it mainly occur?**

The project would replace 14 light sources and install 3 new sources of light for a total of 17 new fixtures that will more effectively illuminate the transit facility. These lights would be operational during hours of low light. Currently, the East Base Yard has an average light level of 1.73 fc with a minimum single light measurement of 0.4 fc, which is below Washington State requirements. After implementation of the project, the average light level would be raised to 4.74 fc with the minimum single light measurement, 30 inches above surface level, being 1.6 fc. This would be a 3.01-fc net gain average across the East Base (Reynolds pers. comm.). Lights would operate when dark outside.

b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No, light or glare from the finished Lighting Project would rectify an existing safety hazard for Metro employees. The new light levels would not interfere with existing views.

c. **What existing off-site sources of light or glare may affect your proposal?**

No existing offsite sources of light or glare would affect the projects.

d. **Proposed measures to reduce or control light and glare impacts, if any:**

Impacts from light and glare were considered during project design. Musco Total Light Control Fixtures were selected based on their ability minimize light glare and spillover by shielding light from above and behind the bulbs, as well as directing/focusing the beam onto the transit facility. Based on modeling, the anticipated unavoidable maximum spillover light levels with full-grown vegetation, during growing seasons, from the Musco Total Light Control Fixtures would range from 0.0 to 0.2 fc, compared to 0.1 to 0.7 fc from the existing LED lights (Figure 7 and 8). The anticipated unavoidable maximum spillover light levels during nongrowing seasons (without tree or shrub canopies) from the Musco Total Light Control Fixtures would range from 0.0 to 0.5 fc as compared to 0.3 to 0.9 fc from the existing LED lights (Figure 7 and 9; King County Metro and Musco 2020). As a result, the overall unavoidable maximum spillover light levels onto areas adjacent to the transit facility is expected to decrease with the installation of these fixtures. In addition, light fixtures would be angled to minimize spillover into critical areas.

Prior to installation, Musco Light Fixtures would be tested at the facility to ensure they meet expected spillover levels modeled. After installation, light levels would be tested within the East Base Yard to verify Washington State light level requirements are met. If requirements are not met, then King County Metro would evaluate how to adapt/readjust light fixtures to meet requirements.

12. Recreation [help]

a. **What designated and informal recreational opportunities are in the immediate vicinity**?

There are limited recreational opportunities in the immediate vicinity of the project site. King County's East rail multi-use trail is located approximately 750 feet west of the project site. East rail provides opportunities for nonmotorized recreation and transportation.

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b. **Would the proposed project displace any existing recreational uses? If so, describe**.

No, the projects would not displace any existing recreational use.

c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any**:

No recreational opportunities would be provided by the projects. The projects would have no impacts on recreation; no measures are proposed.

13. Historic and cultural preservation [help]

a. **Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe**.

There are no recorded, reported, or suspected cultural resources on the project site or in the vicinity.

b. **Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources**.

There are no recorded, reported, or suspected cultural resources on the project site or in the vicinity.

c. **Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc**.

The cultural resources screening was conducted by King County Archaeologist Tom Minichillo on February 19, 2020, using the Department of Archeological and Historic Preservation WISAARD database and the King County Cultural Resource Protection Project database. Mr. Minichillo's screening report concluded that the general setting of the project site on an existing graded and paved roadway with no recorded, reported, or suspected sites in the vicinity suggests a low likelihood for buried intact prehistoric archaeological deposits. The project site is not within a historic district. As a result, no further cultural resources review was needed.

d. **Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required**.

No measures are proposed because no known resources would be affected. In accordance with state law, if any suspected human remains or archaeological deposits are encountered during construction, then all activities will cease in that area while county policies are complied with.

14. Transportation [help]

a. **Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any**.

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The adjacent street, 124th Avenue NE, is the primary arterial that provides access to the facility. There is limited restricted access from 120th Avenue NE.

b. **Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The alignment of Route 226 is 0.5 mile south of the project site. No Metro routes serve the project site.

c. **How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

No additional parking spaces would be constructed as a result of the completed projects. No parking spaces would be eliminated as a result of the completed projects.

d. **Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).**

No, the projects would not require any new or improved roads, streets, or pedestrian, bicycle, or state transportation facilities.

e. **Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

No, the projects would not use water, rail, or air transportation.

f. **How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?**

The projects would not affect the number of vehicular trips following construction.

g. **Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

No, the projects would not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area because this is an urban area.

h. **Proposed measures to reduce or control transportation impacts, if any:**

Primary impacts on transportation would consist of machinery, equipment, and vehicles coming and going from the construction site onto 124th Avenue NE or 120th Avenue NE. Peak construction is expected to require six to eight vehicular trips per day. Since the projects are entirely contained within the East Base Yard, impacts on traffic are expected to be minimal and a project traffic control plan is unlikely to be needed or required.

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15. Public Services [help]

a. **Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe**.

No, the projects would not result in an increased need for public services.

b. **Proposed measures to reduce or control direct impacts on public services, if any**.

No measures are needed to reduce or control direct impacts on public services. The projects would not affect the need for public services in the region.

16. Utilities [help]

a. **~~Circle utilities currently available at the site~~**:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

c. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

The area electrical utility is Puget Sound Energy (PSE). The replacement and installation of conduit for the lighting plan and connection to the PSE system would be needed. Discussions with PSE regarding this connection are currently ongoing. The NGW cabinet would utilize existing conduits and the cabinet would still require additional electricity from PSE.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Lawrence Chung

Name of signee Lawrence Chung

Position and Agency/Organization Transit Environmental Planner, King County Metro Transit

Date Submitted: 04/15/2021

Appendices

Appendix A Yard Lighting Permit Design Plan Set and 95% NGW Design Plan Set

Appendix B Washington State Department of Ecology Facility/Site index

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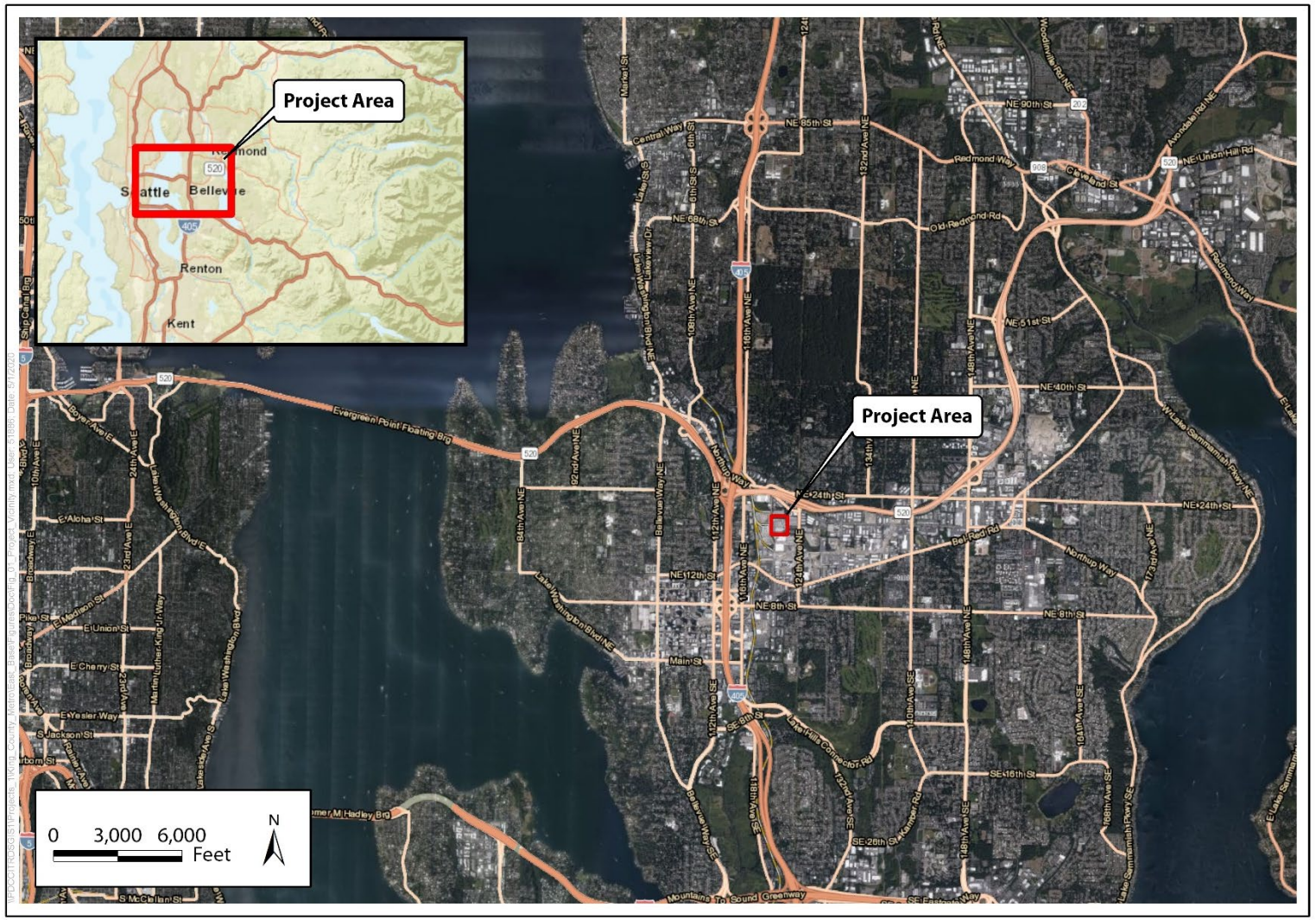


Figure 1
Project Vicinity

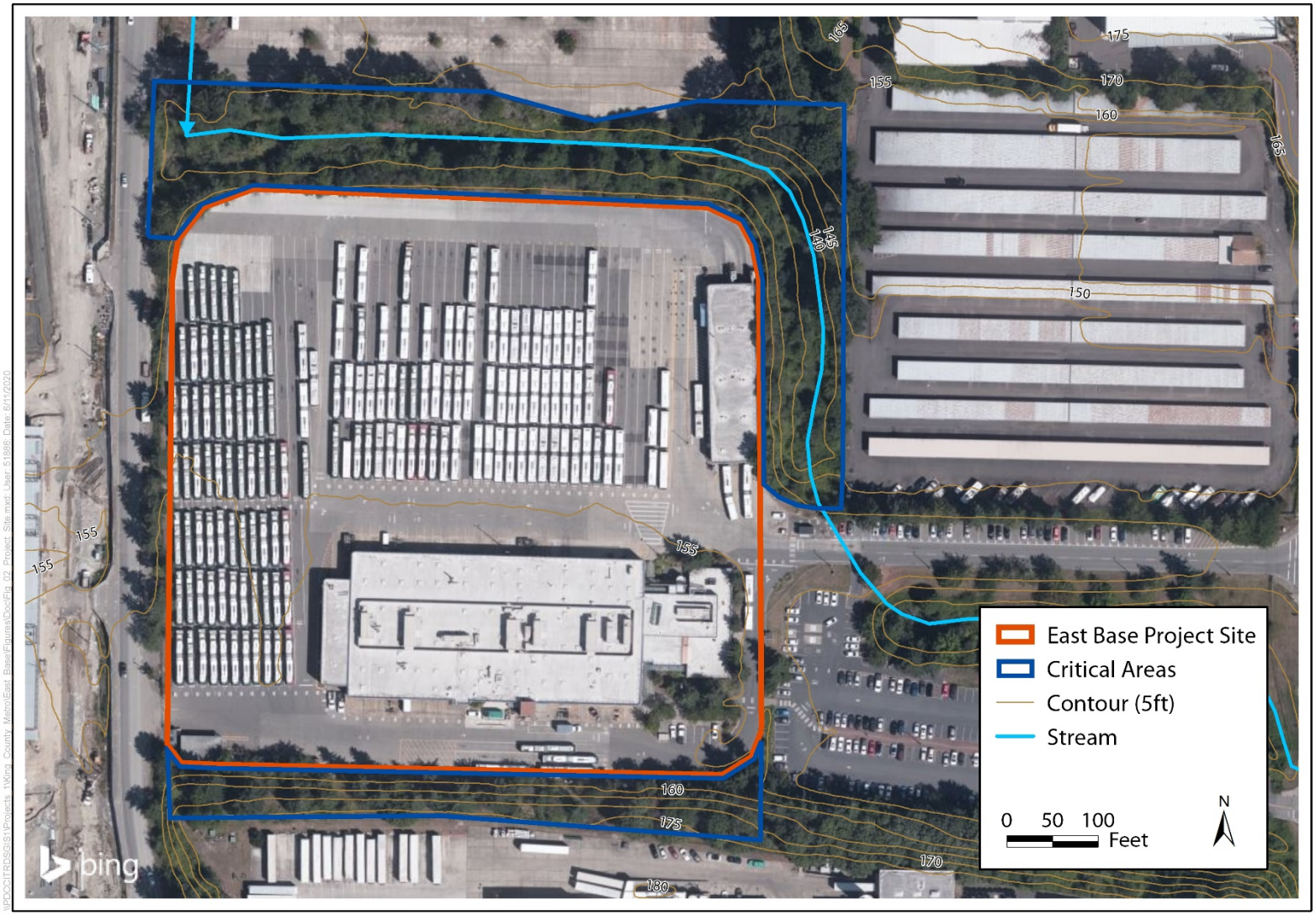


Figure 2
East Base Project Site and Adjacent Critical Areas

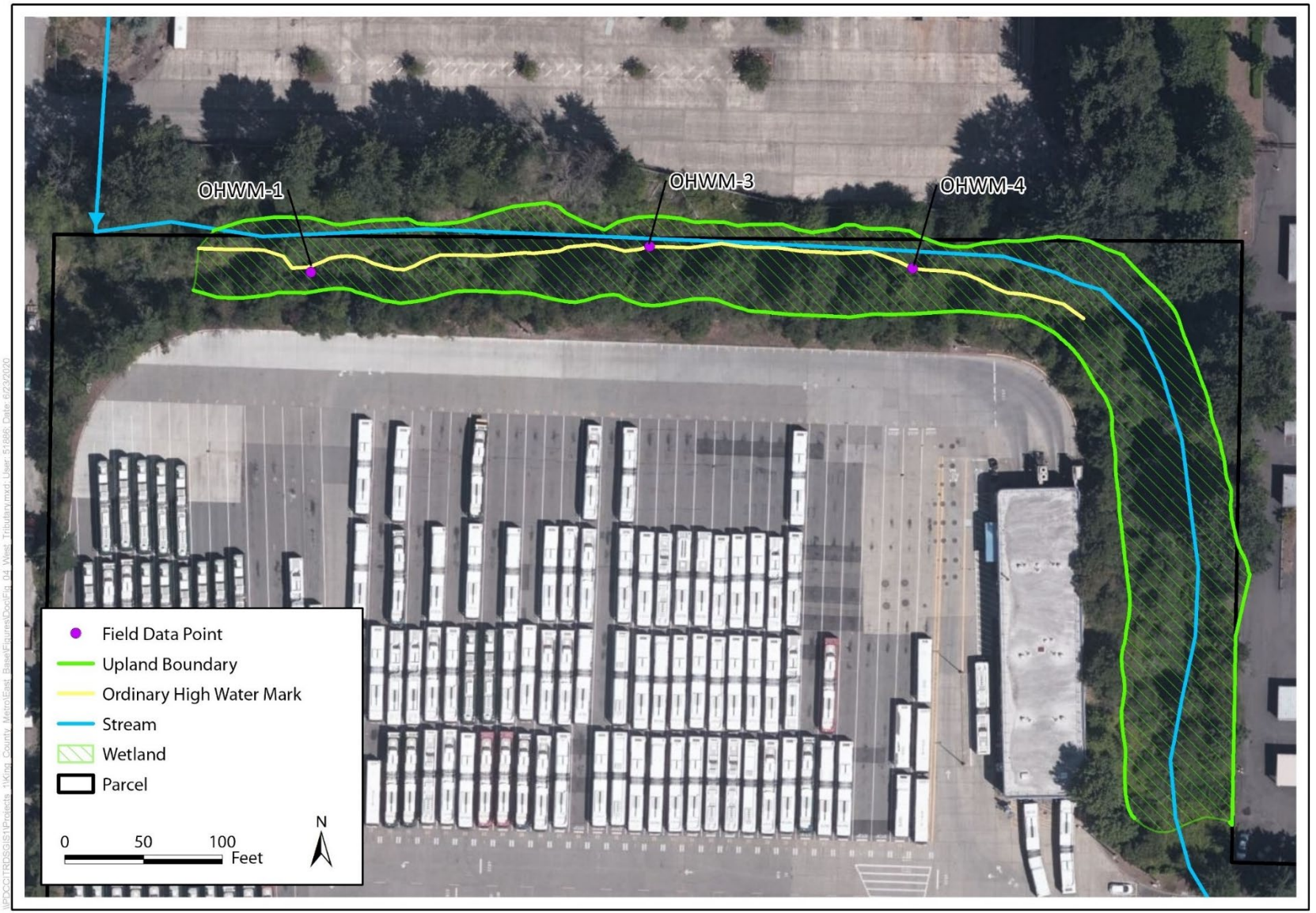


Figure 3
West Tributary Study Area with Sample Plots

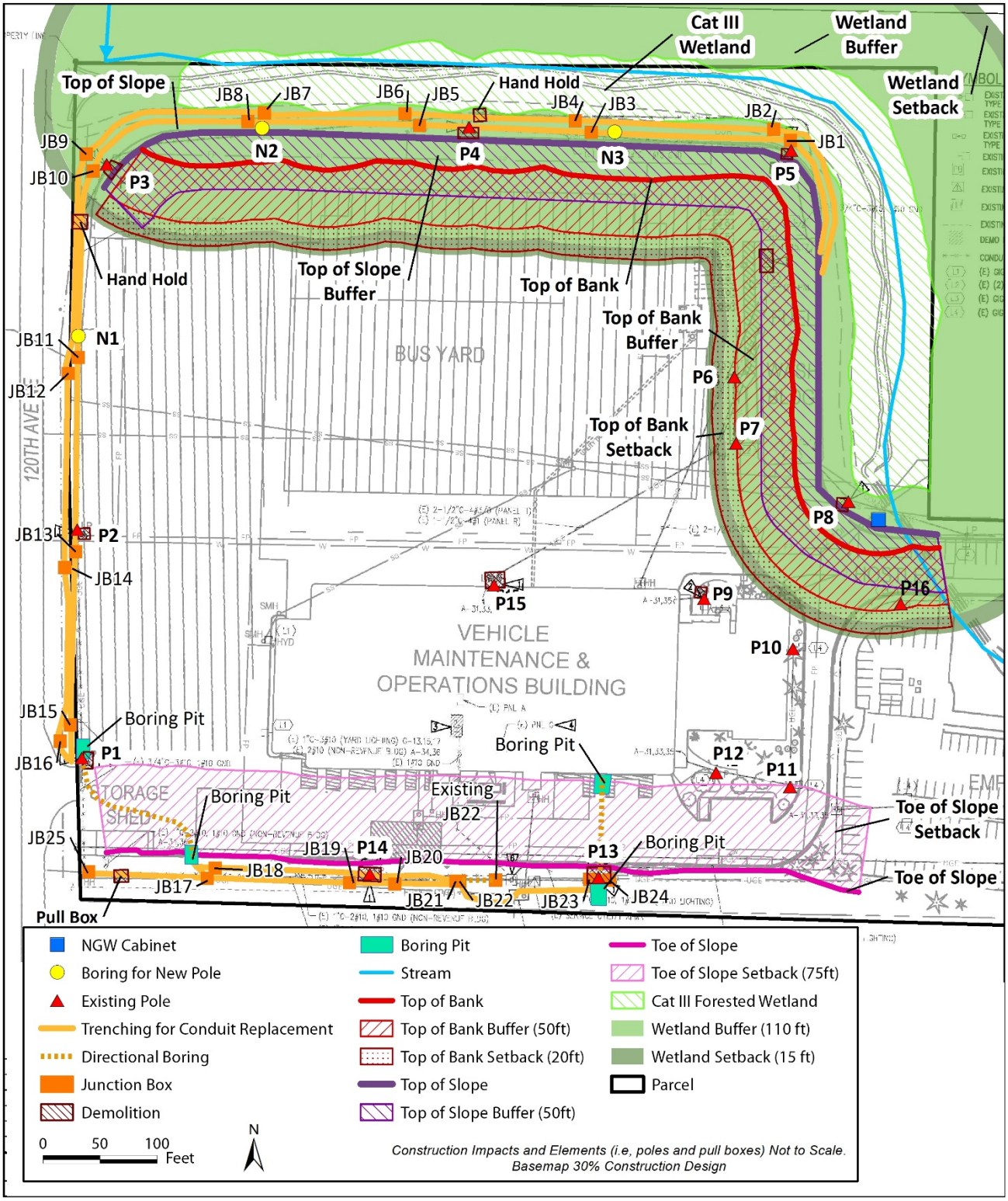


Figure 4
Temporary Impacts During Construction (no buffer and setback exclusions)

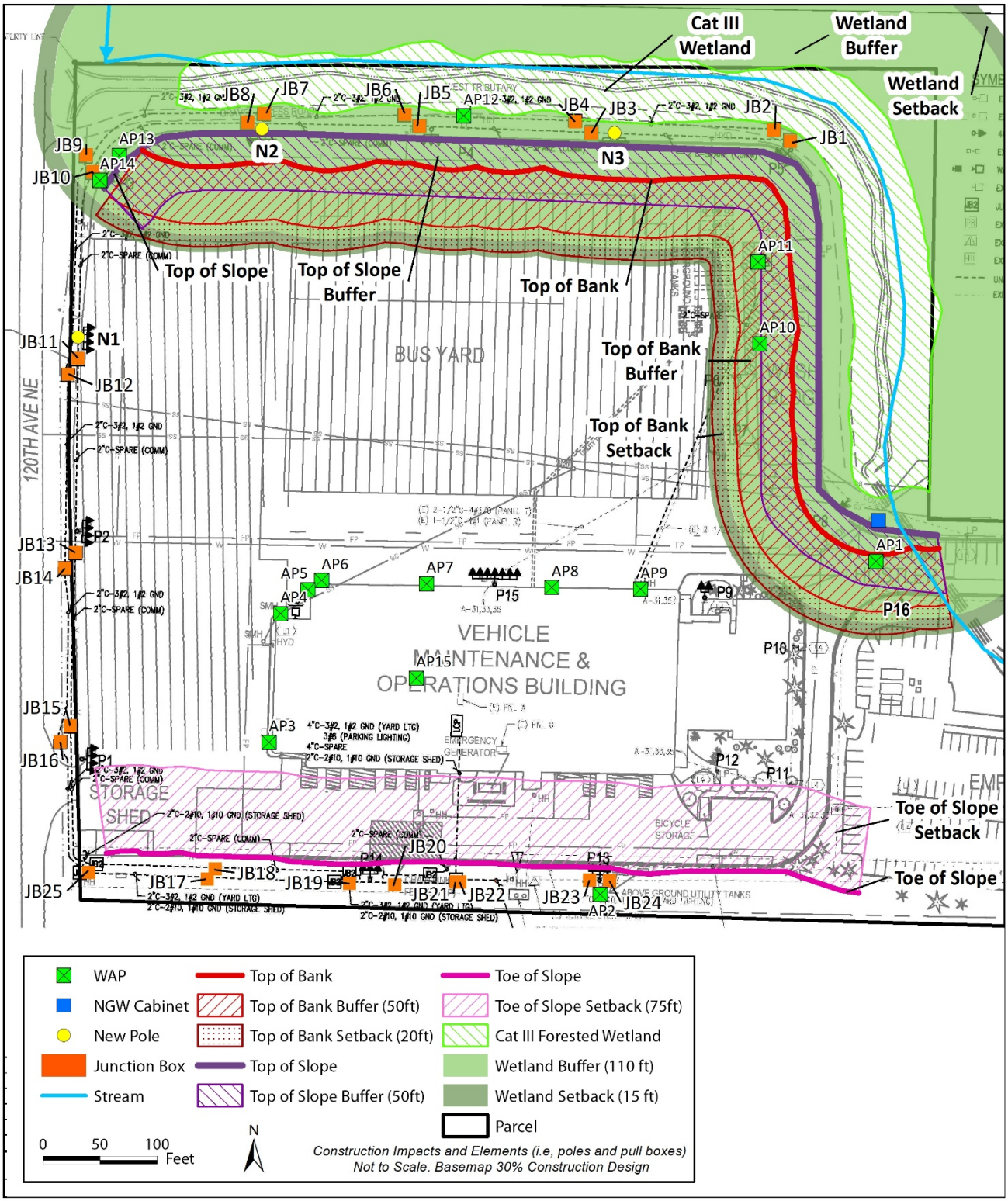


Figure 5
Permanent Impacts (no buffer and setback exclusions)

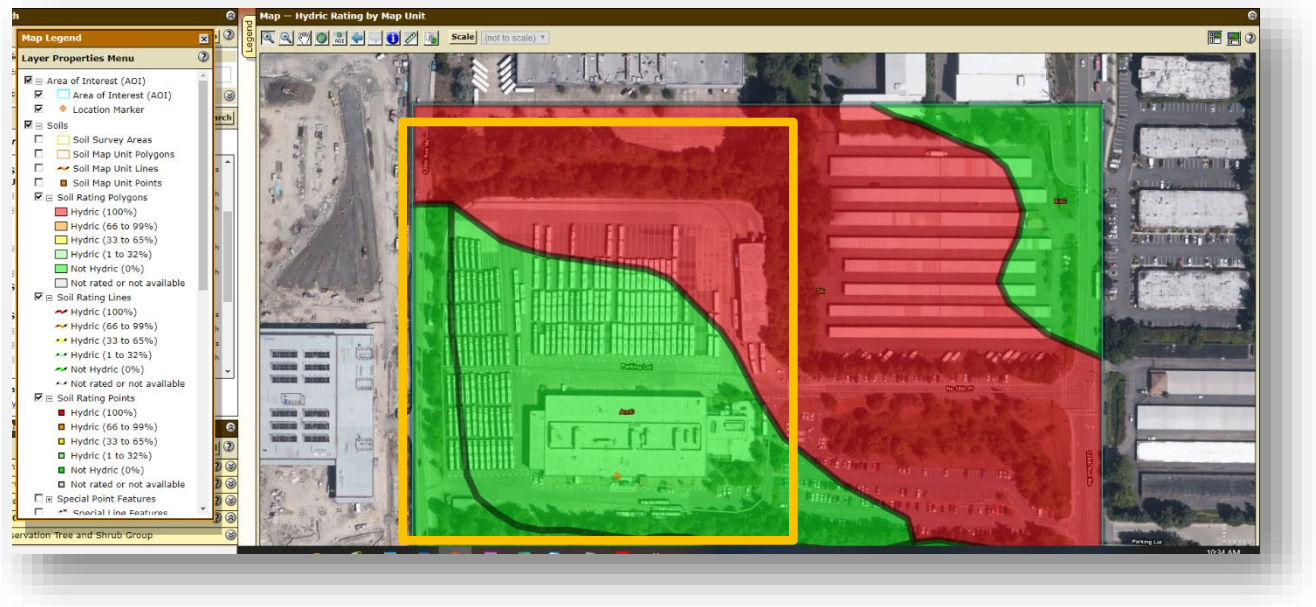


Figure 6

Soil Units Mapped in the Project Area, as indicated by orange box, and Hydric Soil Rating (NRCS 2019)

WITH TREES PLACED (GROWING SEASONS)

Footcandles	Fixtures		
	Original HID	Existing LED	New Musco
Max L1	0.2	0.1	0.2
Max L2	0.1	0.3	0
Max L3	0.1	0.4	0
Max L4	0.1	0.5	0
Max L5	0.1	0.5	0
Max L6	0.1	0.6	0
Max L7	0.3	0.7	0.1
Avg L1	0.06	0.05	0.01
Avg L2	0.05	0.13	0
Avg L3	0.05	0.23	0
Avg L4	0.07	0.35	0
Avg L5	0.09	0.24	0
Avg L6	0.09	0.33	0
Avg L7	0.12	0.28	0

Highest light levels in comparison per line.

WITHOUT TREES PLACED (NON-GROWING SEASONS)

Footcandles	Fixtures		
	Original HID	Existing LED	New Musco
Max L1	0.3	0.3	0.5
Max L2	0.2	0.4	0.2
Max L3	0.2	0.5	0
Max L4	0.2	0.6	0
Max L5	0.2	0.7	0
Max L6	0.2	0.8	0.1
Max L7	0.3	0.9	0.1
Avg L1	0.11	0.1	0.02
Avg L2	0.19	0.26	0.02
Avg L3	0.2	0.39	0
Avg L4	0.2	0.52	0
Avg L5	0.19	0.56	0
Avg L6	0.18	0.63	0.01
Avg L7	0.19	0.52	0.01

Max = Maximum
Avg = Average
L1 = East leg
L2 - L6 = Northeast Arc
L7 = North Leg

Figure 7

Modeling Comparison Between Existing Conditions and Musco Light Fixtures

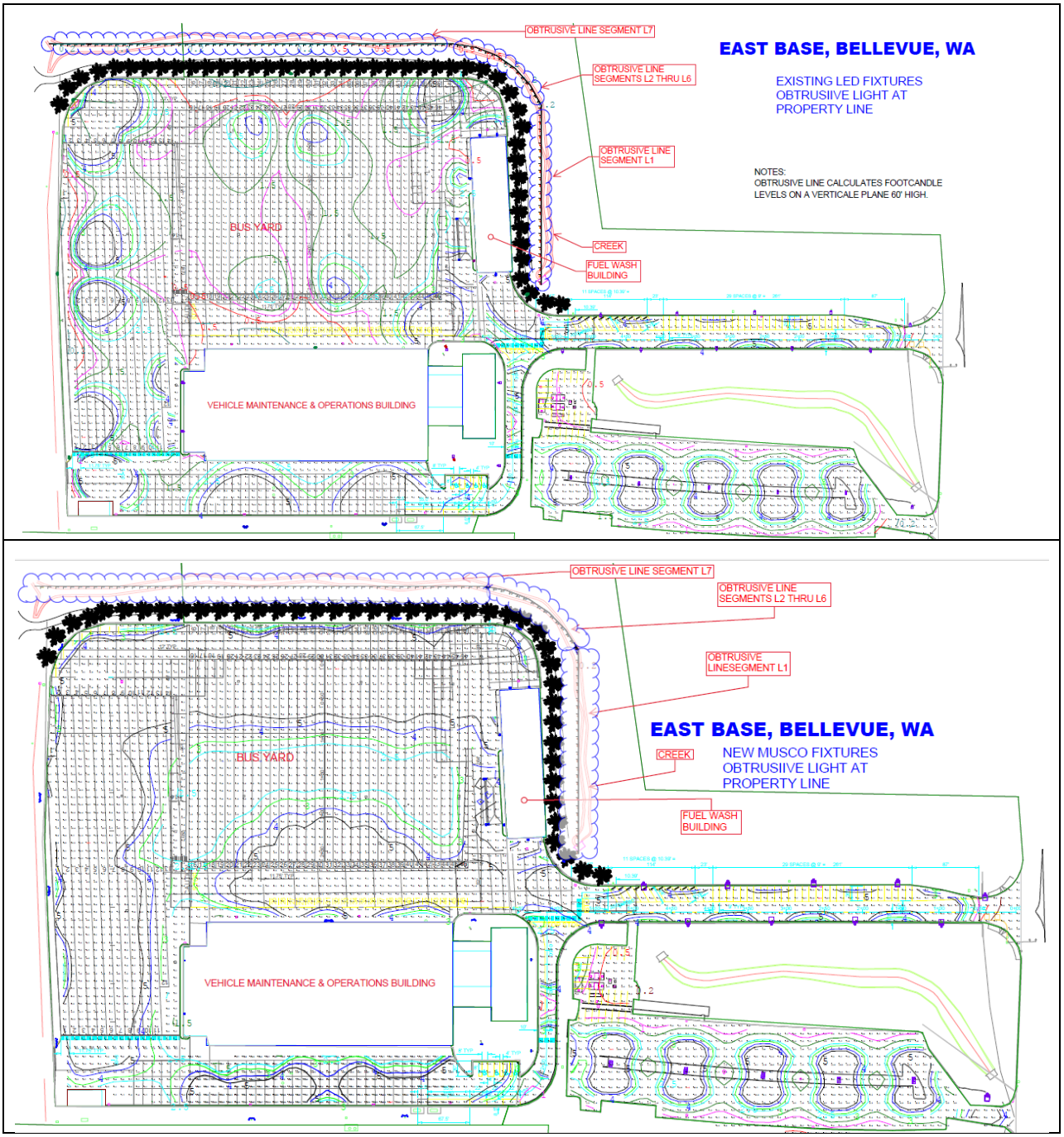


Figure 8
Obtrusive Light Comparison - Existing LED Obtrusive Light with Trees (top); Musco Fixtures Obtrusive Light with Trees (bottom)

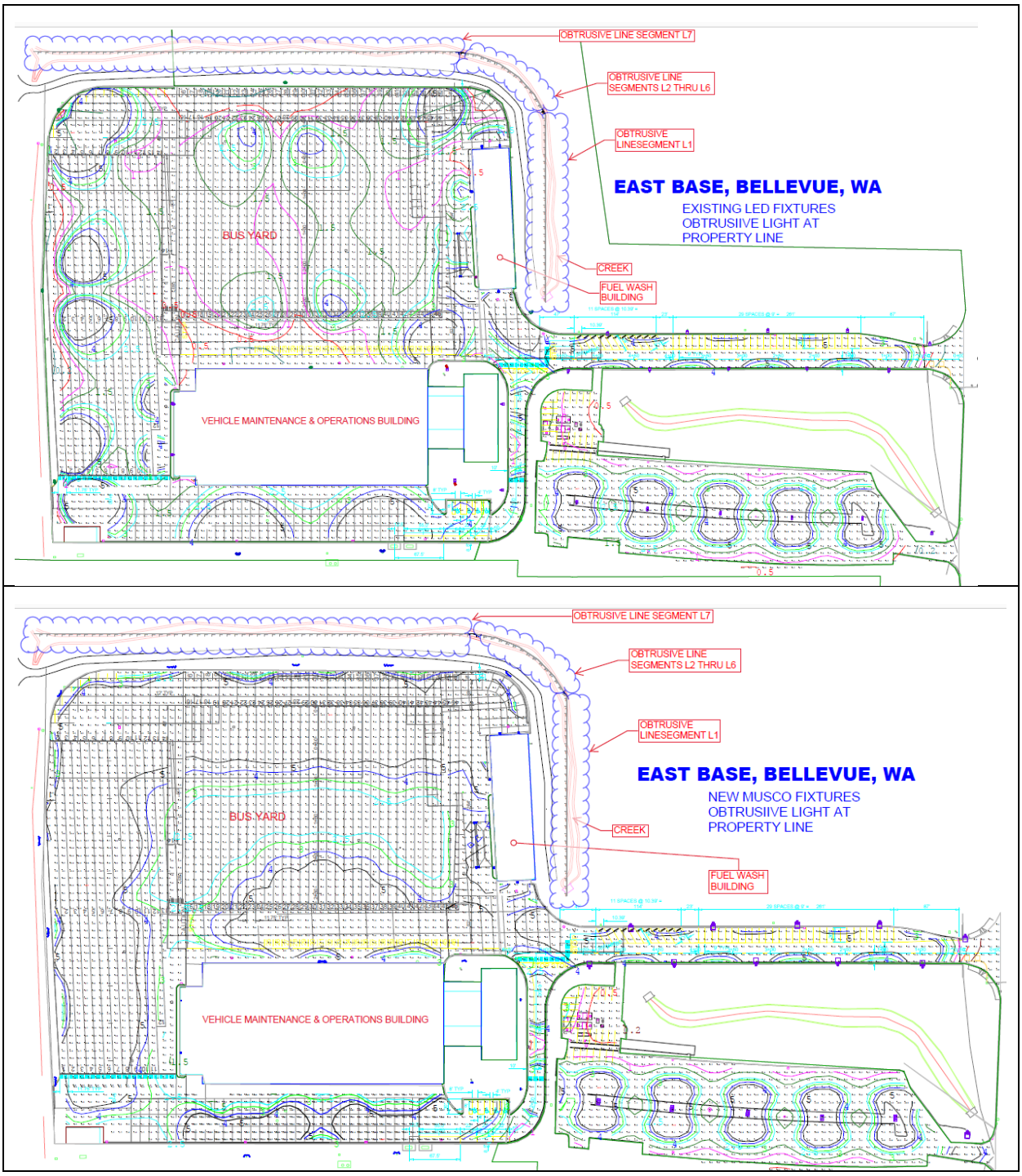
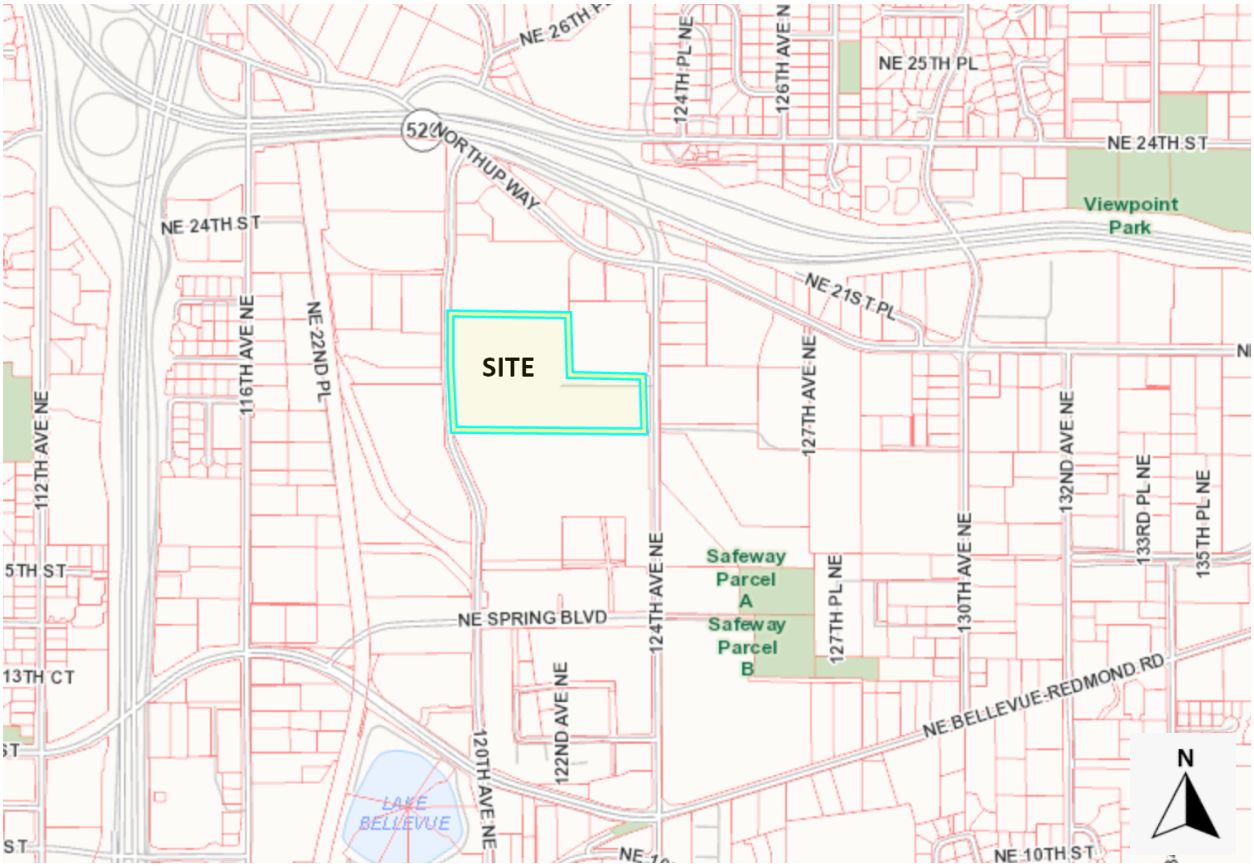


Figure 9
Obtrusive Light Comparison - Existing LED Obtrusive Light without Trees (top); Musco Fixtures Obtrusive Light without Trees (bottom)

Vicinity Map



KING COUNTY METRO EAST BASE YARD LIGHTING REPLACEMENT PROJECT AND NEXT GENERATION WIRELESS (NGW) PROJECT

WETLAND DELINEATION AND CRITICAL AREA REPORT

PREPARED FOR:

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Contents

Tables and Figures

Acronyms and Abbreviations

AP	access point
bgs	below ground surface
Corps	U.S. Army Corps of Engineers
County	King County Metro
CWA	Clean Water Acct
DNR	Washington State Department of Natural Resources
Ecology	Washington State Department of Ecology
FAC	facultative
FACU	facultative upland
FACW	facultative wet
fc	foot candle
GHz	gigahertz
GMA	Growth Management Act
GPS	Global Positioning System
HGM	hydrogeomorphic
HUC	hydrologic unit code
IES	Integrity Energy Services
LED	light-emitting diode
Lighting Project	East Base Yard Lighting Replacement Project
LUC	land use code
Metro	King County Metro Transit
NGW	Next Generation Wireless
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate
OHWM	ordinary high water mark
RCW	Revised Code of Washington
Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region
SEPA	State Environmental Policy Act
SWPPP	Stormwater Pollution Prevention Plan
TESC	temporary erosion sediment control
UPL	upland
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
W	watt
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

Chapter 1
Introduction

1.1 Background

In accordance with City of Bellevue Land Use Code (LUC) 20.25H.005, within a project site, the presence or absence of critical areas, such as wetlands, streams, steep slopes, and wildlife habitat, must be determined. ICF is supporting Integrity Energy Services, Co. (IES) and King County Metro Transit (Metro) to determine the location of critical areas and associated buffers, possible impacts from the projects, and feasible mitigation measures.

1.2 Project Description

Metro is proposing the East Base Yard Lighting Replacement Project (Lighting Project) at East Base to improve lighting throughout the yard. The Lighting Project is needed to enhance worker safety and comply with Washington State Department of Labor and Industries (L&I) light level requirements because the current lighting is out of date with current standards. The current lighting system was deemed inadequate under L&I light level requirements. Washington State requires an average of 3.0-foot candle (fc) 30 inches above surface level with no single light measurement falling below 1.5 fc in the averaged area (Washington Administrative Code [WAC] 296-800-210). Currently the East Base Yard has an average light level of 1.73 fc, with a minimum single light measurement of 0.4 fc—below Washington State L&I requirements (Reynolds pers. comm.). The Lighting Project goal is to meet light level and uniformity requirements while also reducing light pollution and glare as established under WAC 296-800-210.

In addition, to increase construction efficiency, the East Base Next Generation Wireless (NGW) Project (NGW Project) will occur in parallel with the Lighting Project. In 2009, King County Metro installed a Cisco 4.9 gigahertz (GHz) wireless network as part of its On-Board System Communication Center System, which allows bus computers to transmit or upload daily data, such as passenger counts, fare transactions, ORCA card reloads, fare tables, on-board schedules, stop announcements, and other on-board data configurations. In 2018, Cisco discontinued support of this hardware. The goal of the NGW Project is to upgrade the current 4.9 GHz network to a 5 GHz wireless network. Upon completion of the NGW Project, communication and data integration of bus and operations office computer systems would be improved.

Construction and operation of both projects (Lighting Project and NGW Project) would occur within a 391,654-square-foot area in the western portion of the East Base (project site). The bus base at the project site was originally established in 1977 and contains the bus parking area, vehicle maintenance and operations building, and fuel and wash building. The subject projects will replace lighting and NGW infrastructure within critical areas. A related project will replace lighting on existing poles and replace one pole, on the interior of the site and outside of the critical areas.

1.2.1 Lighting Project Elements

Currently, 14 floodlights (poles with light fixtures) that are part of this Lighting Project illuminate the bus parking lot, vehicle maintenance and operations building exterior, and the exterior of the fuel and wash building. The fixtures sit atop 30-, 40- or 60-foot-high poles set in concrete piles. The floodlights are located along the outer perimeter of the site, west of the fuel and wash building, within a landscaped island east of the vehicle maintenance and operations building, and south of the hostler shack (Appendix A, Yard Lighting Plan, Sheet 3 of 37).

The Lighting Project would replace eight existing floodlights along the perimeter (P1–P5, P8, P13, and P14). Three new floodlights (N1-N3) would be installed—two on the northern boundary and one on the western boundary of the site (Appendix A, Yard Lighting Plan Sheet 3 of 37). Five existing poles would have new, replacement light fixtures with light-emitting diode (LED) lights having similar to existing foot candles and wattages: west of the fuel and wash building (P6, P7) and in a landscaped island (P10–P12). The existing P12 has two light fixtures, a 200-watt (W) LED and 600W LED, which would be replaced with a single 600W LED. The existing 400W LED light installed on P8 would be relocated to P16 (Figure 1). New pole foundations would be approximately 36 inches in diameter and roughly 12 feet deep (Appendix A, Yard Lighting Plan, Sheet 27 of 37). New conduit and junction boxes would be installed to route power to the light poles. New pole foundations, junction boxes, and a concrete pad for the NGW cabinet (see Section 1.2.2, *NGW Project Elements* for additional details) would require approximately 1,845 cubic feet of ground disturbance during construction and result in roughly 173 square feet of new hard surfaces upon completion of the project.

Most conduits would be installed at a maximum of 5 feet below grade using trenching. Areas which will utilize directional boring are discussed immediately below. Trenching would disturb approximately 6,628 square feet of surface area and 33,140 cubic feet of ground materials based on a total trenching length of 3,314 feet that is two feet wide and five feet deep. Total trenching includes the 40 cubic feet required for the *NGW Project Elements* discussed in Section 1.2.2. Trenching would take place within lawn landscaping strips north of the hostler shack, along the north and south boundaries, and within gravel to the west boundary. Four soil pits, used for entry and exit during directional boring, will require approximately 942 cubic feet, or 231 square feet of ground disturbance. The four soil pits dimensions are approximately: 1) 10 feet long by 5 feet wide by 1 foot deep; 2) 5 feet long by 5 feet wide by 3.5 feet deep; 3) 16 feet long by 6 feet wide by 4 feet deep; and 4) 10 feet long by 6 feet wide by 7 feet deep. Existing grade or elevation would be restored to match existing conditions.

New project elements – light pole foundations, junction boxes, and the NGW cabinet concrete pad – along with trenching and soil pits would result in approximately 35,927 cubic feet, or 7,029 square feet, of ground disturbance during construction. This ground disturbance total is conservative since it assumes a depth of five feet for all trenching.

A total of 285 linear feet of directional boring under asphalt or concrete panels would occur in three areas: 1) approximately 85 feet between the south boundary, near P13, and vehicle maintenance and operations building; 2) 10 feet between the existing JB22 and the proposed JB22; and 3) 190 feet in the southwest corner of the project area from the proposed JB15 diagonal to the proposed JB17 (Appendix A, Yard Lighting Plan Sheets 18-20, and 24 of 37). The directional bore between the south boundary, near P13, and vehicle maintenance and operations building would have a maximum depth below ground surface (bgs) of 6 feet (Appendix A, Yard Lighting Plan, Sheet 24 of 37). The

directional bore between the existing JB22 and the proposed JB22 would have an approximate maximum depth bgs of 2 feet (Appendix A, Yard Lighting Plan, Sheet 19 of 37). The directional bore located at the southwest corner of the site would have a maximum depth bgs of 12 feet (Appendix A, Yard Lighting Plan, Sheet 18 of 37).

All existing, new, and replacement floodlights would have Musco Total Light Control fixtures. Seven of the 8 replacement floodlights (P1–P5, P13, and P14) would have light fixtures changed from the current 600W LED lights to 400W LED lights. The new floodlights (N1–N3) would have 400W LED lights installed. Floodlight poles P6, P7, and P10–P12 would have updated light fixtures with new LED bulbs similar to the existing wattages. However, P12 currently using two light fixtures, a 200W LED and 600W LED, would be replaced with a single 600W LED. The existing 200W LED light would be removed and not replaced. Floodlight pole P8's current 400W LED light would be replaced with another LED light of the same wattage. The existing 400W LED light on P8 would be moved and added to P16, which currently has a single 200W LED.P9 and P15 are outside the scope of this project. Please see Figure 1 for a summary of the existing and proposed floodlight pole schedule.

EXISTING FLOODLIGHT POLE SCHEDULE

POLE	HEIGHT	FLOODLIGHTS	FLOODLIGHT WATTAGE
P1	60'–0"	2	600W
P2	60'–0"	1	600W
P3	60'–0"	2	600W
P4	60'–0"	2	600W
P5	60'–0"	1	600W
P6	30'–0"	2	50W
P7	30'–0"	2	50W
P8	40'–0"	1	400W
P9	40'–0"	3	(2)400W, (1)200W
P10	30'–0"	1	200W
P11	30'–0"	1	200W
P12	60'–0"	2	(1)600W, (1)200W
P13	60'–0"	2	600W
P14	40'–0"	2	600W
P15	60'–0"	7	400W
P16	30'–0"	1	200W

FLOODLIGHT POLE SCHEDULE

POLE	HEIGHT	FLOODLIGHTS	FLOODLIGHT WATTAGE
P1	60'–0"	4	400W
P2	60'–0"	4	400W
P3	60'–0"	3	400W
P4	60'–0"	3	400W
P5	60'–0"	3	400W
P6	30'–0"	2	50W
P7	30'–0"	2	50W
P8	40'–0"	1	400W
P9	40'–0"	2	400W
P10	30'–0"	1	200W
P11	30'–0"	1	200W
P12	60'–0"	1	600W
P13	60'–0"	3	400W
P14	40'–0"	3	400W
P15	60'–0"	7	400W
P16	30'–0"	2	(1)200W, (1)400W
N1	60'–0"	4	400W
N2	60'–0"	4	400W
N3	60'–0"	4	400W

Figure 1. East Base Light Project Existing and Proposed Floodlight Schedule

Upon completion of the Lighting Project, the East Base yard lighting system would provide increased safety and security, improved controllability of lights, and reduced glare and light pollution to surrounding areas.

1.2.2 NGW Project Elements

The NGW Project would require installing a NGW cabinet on top of a concrete pad and two surface bollards. The surface bollards would protect the NGW cabinet from bus traffic. The NGW cabinet would measure 31 inches long by 37 inches wide. The supporting concrete pad would measure up to 6.1 feet long by 3.7 feet wide and would be buried approximately 3.5 feet bgs. The area below the concrete pad would be over excavated to a depth of 6 inches, compacted, and backfilled with crushed rock. Installation of the supporting concrete pad would result in approximately 79 cubic feet of ground disturbance during construction. Up to three underground 1- to 2-inch conduits may

be needed to connect the NGW cabinet to the adjacent existing monitoring station and nearby existing handhole (Appendix A, Yard Lighting Plan, Sheet 25 of 37). This could result in up to 40 cubic feet of ground disturbance from trenching during conduit installation. Finally, a pole with a 1.5" diameter will be used to secure the placement of Cisco wireless access point number 1 (AP1). The pole is an existing pole attached to the southwest corner of the hostler shack, and thus no new ground impact would be created. All existing grade or elevation would be restored to match existing conditions.

Fifteen new Cisco wireless access points (APs) would also be installed throughout the East Base. All APs would be attached to floodlights mentioned in the lighting project elements, to an existing pole, or to existing buildings and would have no ground impact:

- Four APs on floodlights P3, P4, and P13: one in the south and three along the north boundary.
- One AP on an existing pole near the hostler shack.
- Eight APs on the operations and maintenance building: seven on the exterior and one in the interior.
- Two APs on the western side of the fuel and wash building.

Of the eight APs on the operations and maintenance building, six would be directional and mounted on the exterior northern wall; one would be omni-directional and mounted on the exterior southwest corner; and one would be omni-directional within the mid-western portion of the building. APs mounted on northern floodlight poles and fuel and wash building would be directional. The APs on the southern floodlight pole and pole near the hostler shack would be omni-directional. The APs would be between 12 and 14 feet high, as measured from the bottom of the antenna (Appendix A, NGW Plan Drawing, Sheet 4 and 21 of 21). Upon completion of the NGW Project, communication and data integration of bus and operations office computer systems would be improved.

Chapter 2
Regulatory Framework

2.1 Local Regulations

The Washington State Growth Management Act (GMA) of 1990 requires that comprehensive growth plans be developed by counties and cities with state oversight. The GMA specifically lists five "critical areas" for which local governments must designate and develop protection and enhancement programs. These five areas are fish and wildlife habitat, wetlands, aquifer recharge areas, flood hazard areas, and geological hazard areas. In the City of Bellevue's Critical Area Ordinance and Land Use Code (LUC), these areas include Streams and Riparian Areas (LUC 20.25H.075), Wetlands (LUC 20.25H.095), Habitats for Species of Local Importance (LUC 20.25H.150), Frequently Flooded Areas (LUC 20.25H.175), and Geological Hazard Areas (LUC 20.25H.120). Projects that would be within these critical areas or associated buffers and structural setbacks are required to complete a critical area report and SEPA checklist as part of obtaining a City of Bellevue Critical Areas Land Use permit (City of Bellevue 2019).

2.1.1 Buffers and Structural Setbacks

Associated critical area buffers and structural setbacks are described in LUC 20.25H.035. Wetland buffers and setbacks are determined through the Washington State Department of Ecology (Ecology) wetland rating system's overall category and habitat score unless they are already included in an established Native Growth Protection Areas or Native Growth Protection Easements plan. If a wetland buffer or structural setback extends into a primary structure established prior to August 1, 2006, this buffer or structural setback shall be modified to exclude the structure (LUC 20.25H.095.D.1.b).[1]

Table 1. Wetland Critical Area Buffer and Structural Setback

Wetland Category	Habitat Score	Buffer (feet)	Structural Setback (feet)
I	8-9	225	20
	5-7	110	
	3-4	75	
II	8-9	225	20
	5-7	110	
	3-4	75	
III	8-9	225	15
	5-7	110	
	3-4	60	
IV	All	40	None

[1] The classification of legal nonconforming primary structure, subject to City of Bellevue's interpretation, could be applicable to East Base and the project could be exempt from wetland buffer and setback requirements as the entire East Base was established well before August 1, 2006.

Stream buffers and structural setbacks are typically determined through Washington State Department of Natural Resources (DNR) stream type (LUC 20.25H.075.B). However, streams within the Kelsey Creek basin have specific buffer and setback ordinances. As such, the entire reach of the West Tributary, Kelsey Creek basin is required to have a 50-foot buffer and additional 20-foot setback from the top of bank (LUC 20.25H.075.C.1.c and LUC 20.25H.075.D.2.c). It should be noted that "top of bank" is defined by the City of Bellevue as an area 50 feet out beyond a break that is flatter than 3:1 (LUC 20.50.048).

Steep slope buffers and structural setbacks are determined from top or toe of slope. From the toe of slope, the City of Bellevue requires a 75-foot setback with no mandatory buffer (LUC 20.25H.120.C.2.b); at the top of slope, a 50-foot buffer with no mandatory structural setback is required (LUC 20.25H.120.B.1.b). If a steep slope buffer or structural setback extends into a primary structure established prior to August 1, 2006, this buffer or structural setback shall be modified to exclude the structure (LUC 20.25H.120.B.2).[2]

2.2 State Regulations

Ecology regulates and requires permits for discharges into state waters and wetlands under the state Water Pollution Control Act and federal Clean Water Act (CWA) Water Quality Certification (Section 401). Ecology has authority under the Water Pollution Control Act to regulate any change in the physical, biological, or chemical properties of any waters of Washington (Revised Code of Washington [RCW] 90.48.020). Additionally, under the Washington State Hydraulic Code, a Hydraulic Project Approval would be required from the Washington Department of Fish and Wildlife (WDFW) for any changes to the wetland or streams that may impact hydrology downstream (Washington Administrative Code Chapter 220-660). The Hydraulic Project Approval typically also requires a SEPA determination from the local government in order to analyze current conditions and possible impacts from a proposed project (RCW Chapter 43.21C). If project work does not result in discharge into state waters and wetlands or change to downstream hydrology during project construction or operation, these permits would not be required.

2.3 Federal Regulations

Any project or development that discharges dredged and fill material into a water of the United States is required to obtain a nationwide or individual permit from the U.S. Army Corps of Engineers (Corps) (33 United States Code [U.S.C.] Section 1251 et seq.; CWA Section 404). If project work does not result in discharge or fill into waters of the United States during project construction or operation, this permit would not be required. As no navigable waterway is within the King County Metro East Base Yard, any streams or wetlands identified during the delineation would not be regulated under Section 10 of the Clean Rivers and Harbors Act.

[2] The classification of legal nonconforming primary structure, subject to City of Bellevue's interpretation, could be applicable to East Base and the projects could be exempt from steep slope buffer and setback requirements as the entire East Base was established well before August 1, 2006.

2.3.1 Determination of Potentially Jurisdictional Ditches

Jurisdictional ditches have the potential to provide functions such as water quality treatment, sediment removal, and stormwater conveyance. Ditches can be regulated by the Corps if they meet criteria demonstrating they have a direct and significant connection to regulated water of the United States.

In June 2007, the Corps issued Regulatory Guidance Letter No. 07-01 on the Practices for Documenting Jurisdiction under Sections 9 and 10 of the Rivers and Harbors Act of 1899 and Section 404 of the CWA. This letter was in response to the June 19, 2006, ruling by the U.S. Supreme Court on *Rapanos v. United States*, 547 U.S. 715 (2006), which did not clarify the definition of a jurisdictional "water of the United States." On June 29, 2015, the U.S. Environmental Protection Agency published the Clean Water Rule (80 Fed. Reg. 37054, June 29, 2015). The final rule became effective on August 28, 2015 but was subsequently stayed (not enacted) nationwide as of October 9, 2015, by the U.S. Court of Appeals for the Sixth Circuit.

Consequently, at this time, the Corps continues to use the following criteria in determining whether a ditch could be considered a jurisdictional water of the United States:

- The presence of a defined bed and bank.
- The presence of an ordinary high water mark (OHWM) or scour mark.
- Evidence of flow or, in some cases, standing water (although standing water may indicate infiltration).
- Hydraulic or hydrologic connection to jurisdictional features, such as wetlands or streams.
- Ditches with the following characteristics are generally not considered jurisdictional:
    - Ditches within streams or wetlands (such features are already regulated by the Corps).
    - Ditches that appear to infiltrate stormwater (they do not discharge directly to a wetland, stream, culvert, catch basin, or other stormwater facility).
    - Paved ditches.
    - Areas where water runs on asphalt next to jersey barriers.
    - Piped or culverted systems.
    - Shallow depressions, upland swales, tire tracks, and other drainage features without a defined bed and bank.

The extent of potential jurisdictional ditches terminates when there is a break between jurisdictional and nonjurisdictional ditch segments. A break is defined as a section of ditch that lacks the defining jurisdictional ditch criteria listed above.

Chapter 3
Methods

3.1 Desktop Analysis

Prior to fieldwork, the potential for critical areas to be present in the project site and adjacent areas was evaluated using the following sources. Figures generated from agency websites are provided in Appendix B, Agency Online Mapping Resources:

- Aerial photographs viewed in Google Earth
- City of Bellevue Stream and Critical Areas Map (City of Bellevue 2018a)
- City of Bellevue Geologic Hazards Map (City of Bellevue 2018b)
- Ecology Puget Sound Watershed Characterization Project (Ecology 2019)
- Flood Insurance Rate Map for King County Washington Incorporated Areas, Panel 368 of 1725 (Federal Emergency Management Agency 1995)
- King County iMaps (King County 2020)
- Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2019)
- NRCS WETS table (National Water and Climate Center 2020)
- Tetra Tech West Tributary Habitat Assessment, Final Report (Tetra Tech 2016)
- U.S. Geological Survey (USGS) 7.5-minute series Kirkland quadrangle topographic map (USGS 2017)
- USGS 7.5-minute series Mercer Island quadrangle topographic map (USGS 2017)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data (USFWS 2019)
- WDFW Priority Habitats and Species: Maps (WDFW 2020a)
- WDFW SalmonScape (WDFW 2020b)
- Washington Natural Heritage Program, rare and imperiled species and plant communities (DNR 2019)

3.2 Fieldwork

The wetland delineation was conducted using the methods outlined in the Corps' 1987 *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Regional Supplement; Environmental Laboratory 2010). Stream OHWM was established within the

property boundary per Ecology's *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Ecology 2016).

ICF collected field data on March 27 and April 2, 2020; wetland boundaries were documented using the Regional Supplement data forms. Wetland boundaries were identified using sample plots where data on vegetation, soils, and observable hydrology was collected. Seven sample plots were recorded to document wetland and adjacent upland conditions; the data forms are presented in Appendix C, U.S. Army Corps of Engineers Wetland Delineation Data Forms. Three OHWM field data forms are presented in Appendix D, Washington State Department of Ecology OHWM Determination Forms. The associated Wetland Rating Forms are presented in Appendix E. Prior to the field survey, hydrological conditions were reviewed to determine if hydrological conditions could be considered wet, normal, or dry (Appendix F, WETS table). A photo log of existing conditions along West Tributary and the southern steep slope is provided in Appendix G, Photo Log, and a plant list of vegetation observed during fieldwork is provided in Appendix H, Study Area Plant List.

Wetland boundaries, stream OHWM, and sample plot locations were flagged in the field and recorded using a sub-meter Global Positioning System (GPS) unit. Formal sample plot locations were marked in the field using pink flags labeled with the sample ID.

ICF investigated the project site and adjacent areas for potentially jurisdictional ditches. The investigation involved searching for features or conditions that could cause the Corps to assert jurisdiction, as described above.

3.2.1 Hydrology

Wetland hydrology is defined as soil inundation or saturation for sufficient duration to develop hydric soils that support vegetation typically adapted for life in periodically anaerobic soil conditions (Environmental Laboratory 1987, 2010). Primary indicators of wetland hydrology include inundation (i.e., standing water), saturation in the upper 12 inches of the soil column, shallow water table (upper 12 inches), water marks or lines on adjacent stationary objects (e.g., trees), sediment deposits or drift lines on vegetation, oxidized rhizospheres along living roots, and water-stained leaves, among others. The presence of two or more secondary hydrology indicators also satisfies the Corps' criteria for evidence of wetland hydrology. Secondary indicators include surface drainage patterns, a dry-season water table, shallow aquitard, saturation on aerial photography, geomorphic position, or facultative (FAC)-neutral test (Environmental Laboratory 2010).

3.2.2 Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded for sufficient duration during the growing season to develop anaerobic (i.e., reducing) conditions in the upper layers (Environmental Laboratory 1987, 2010). Hydric soils were identified in the field by digging soil pits to at least 16-inch depth, where possible, and examining the soil profile for hydric soil indicators as defined by the National Technical Committee for Hydric Soils (NRCS 2018). A soil may be considered hydric if any one of the following indicators is present:

- More than 50% organic material in the upper horizon
- Strong sulfidic odor

- Morphological characteristics that meet specific hydric soil indicators (NRCS 2018; Environmental Laboratory 1987, 2010)

Soil texture, matrix color, and presence of redoximorphic features, depleted matrix, or other relevant hydric soil indicators were recorded on the Regional Supplement field data forms (Appendix C). Soil hue, value, and chroma were determined using the Munsell Soil Color Chart System (Munsell Color Services 2000).

3.2.3 Hydrophytic Vegetation

Hydrophytic vegetation are plants that have adapted a tolerance for prolonged periods of saturation or inundation. Under normal conditions, hydrophytic vegetation is considered present if more than 50% of the dominant species from each stratum—tree, shrub, vine, and herbaceous—are classified as obligate (OBL), facultative wet (FACW), and/or FAC, according to the USFWS publication *The National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al. 2016). These classifications are based on the likelihood a certain plant species occurs within a wetland, as shown in Table 2.

Table 2. Plant Species Indicator Category Definitions

Category	Definition
Obligate (OBL)	Plants that almost always occur in wetlands (estimated probability >99%) under natural conditions.
Facultative wet (FACW)	Plants that usually occur in wetlands (estimated probability 67%–99%) but are occasionally found in nonwetland areas.
Facultative (FAC)	Plants that are equally likely to occur in wetlands or nonwetlands (estimated probability 33%–67%).
Facultative upland (FACU)	Plants that usually occur in nonwetlands (estimated probability 67%–99%).
Upland (UPL)	Plants that usually occur in nonwetlands (estimated probability >99%) under natural conditions.

Source: Lichvar et al. 2016.

Plant species were identified using standard taxonomic references (Cooke 1997; Pojar and Mackinnon 2004; Hitchcock and Cronquist 1973). Dominant species were determined by using the 50/20 rule, where dominants are the most abundant species that individually or collectively account for more than 50% of the total coverage of vegetation in the stratum (layer), plus any other species that by itself accounts for at least 20% of the total, as shown on the data forms (Appendix C). All plant species encountered at a sample plot are listed on the data forms, which, when taken together, provide a full picture of the vegetation community.

3.2.4 Determination of Wetland Classifications

Cowardin vegetation class and hydrogeomorphic (HGM) class information are required to determine the functions of wetlands and to inform mitigation design if unavoidable impacts on wetlands are proposed. Cowardin vegetation class was determined based on the USFWS wetland classification system (Cowardin et al. 1979). HGM class was determined in the field using the guiding document *A Hydrogeomorphic Classification for Wetlands* (Brinson 1993).

3.2.5 Wetland Functional Assessment

Wetlands were rated according to the guidelines set forth in the *Washington State Wetland Rating System for Western Washington* (Hruby 2014) (Appendix E). The functional assessment is based on three major groups of functions that wetlands perform: water quality improvement, hydrologic functions, and wildlife habitat. Each function is given equal importance in setting the category for a wetland. The ratings for each function are divided into "site potential," "landscape potential," and "value." The rating for each function can be useful in determining how well a wetland performs each function. The functional analysis informs local wetland buffer requirements and mitigation planning so that wetland creation, restoration, or enhancement areas compensate for the functions specific to the affected wetlands. As mentioned previously, this rating is often utilized by local agencies to determine required buffers.

Chapter 4
Results

4.1 Existing Conditions

4.1.1 Project Setting

The East Base bus yard is located at 1975 124th Avenue NE, Bellevue, WA 98005 (Figure 2). The project site, where construction and operation of the projects would occur, is a 391,654-square-foot area within the East Base bus yard (Figure 3). The project site is in Section 28, Township 25N, Range 5E; central coordinates 47.627614°, -122.178819°. The King County property parcel number is 2825059026. The project site is in a highly developed setting. Immediately west of the project site is a paved road separating East Base from a large construction site. A tributary to Kelsey Creek (West Tributary) is immediately to the north followed by an industrial bakery building owned by the Bellevue School District. The tributary turns and is then adjacent to the northeast boundary of the project site followed by a public storage facility. Parking for East Base is located east of the East Base Vehicle Maintenance and Operations Building and west of 124th Avenue NE. A warehouse distribution center owned by Safeway is immediately to the south of the project site.

4.1.2 Critical Area Study Extent

The critical area study extent focused on the project site, as defined above, and the potential critical areas immediately adjacent to the project site (study area; Figure 3). Three potential critical areas were identified during the initial desktop assessment for the projects. These adjacent critical areas included the West Tributary and associated wetland to the north and steep slopes to the north and south of the project site. Because no light fixtures would be replaced or added to the eastern portion of the site that is currently used for parking, this portion was excluded from critical area determination and buffer assessment.

4.2 Desktop Assessment Results

4.2.1 U.S. Geological Survey Topographic Map

The West Tributary is mapped as a blue line feature at the bottom of the 7.5-minute USGS Kirkland topographic map (USGS 2017). This feature continues in the 2017 7.5- minute USGS Mercer Island topographic map (USGS 2017) flowing south into Kelsey Creek, which drains west into Mercer Slough and then into Lake Washington, a Traditional Navigable Waterway.

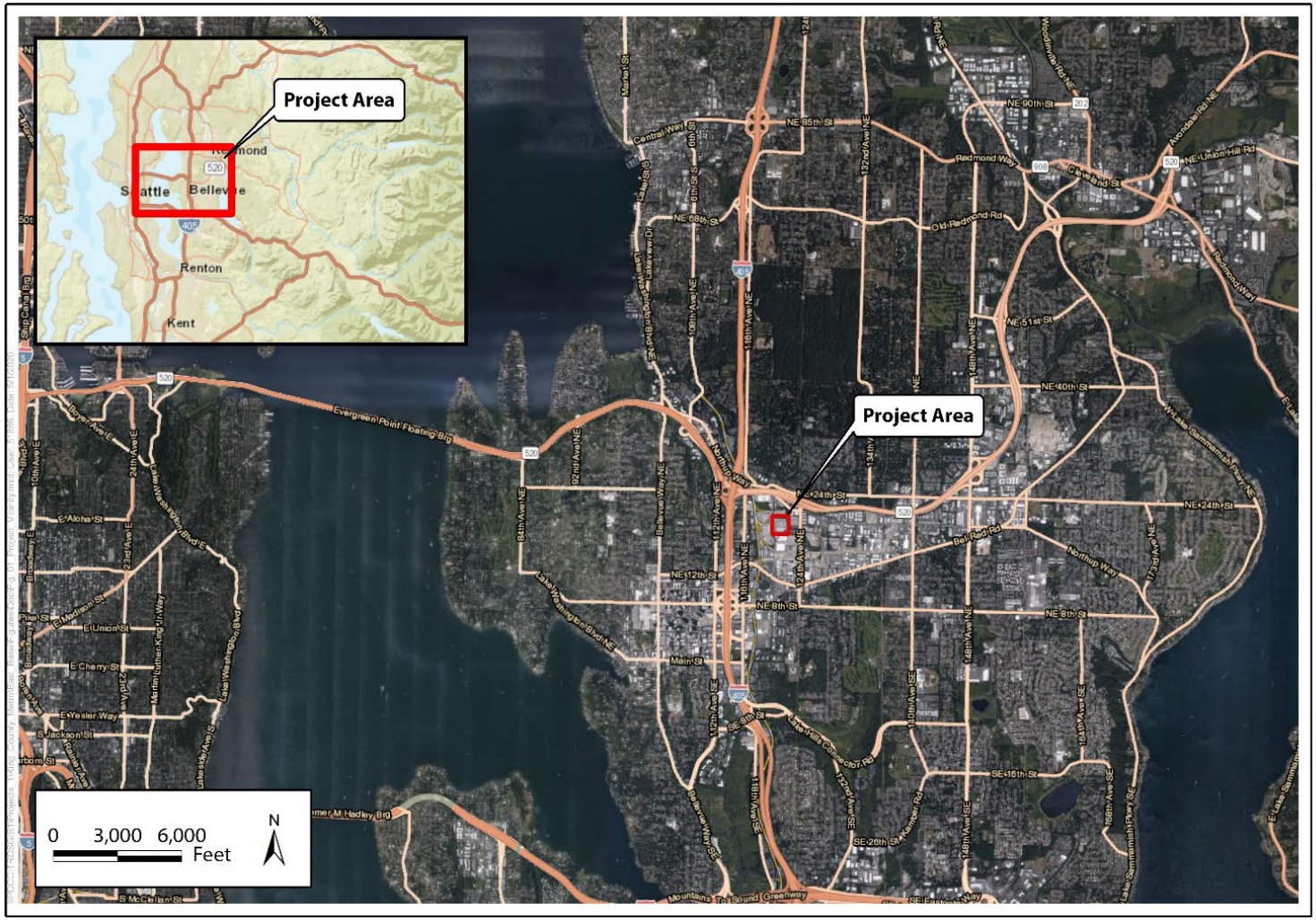

Figure 2. East Base Project Vicinity

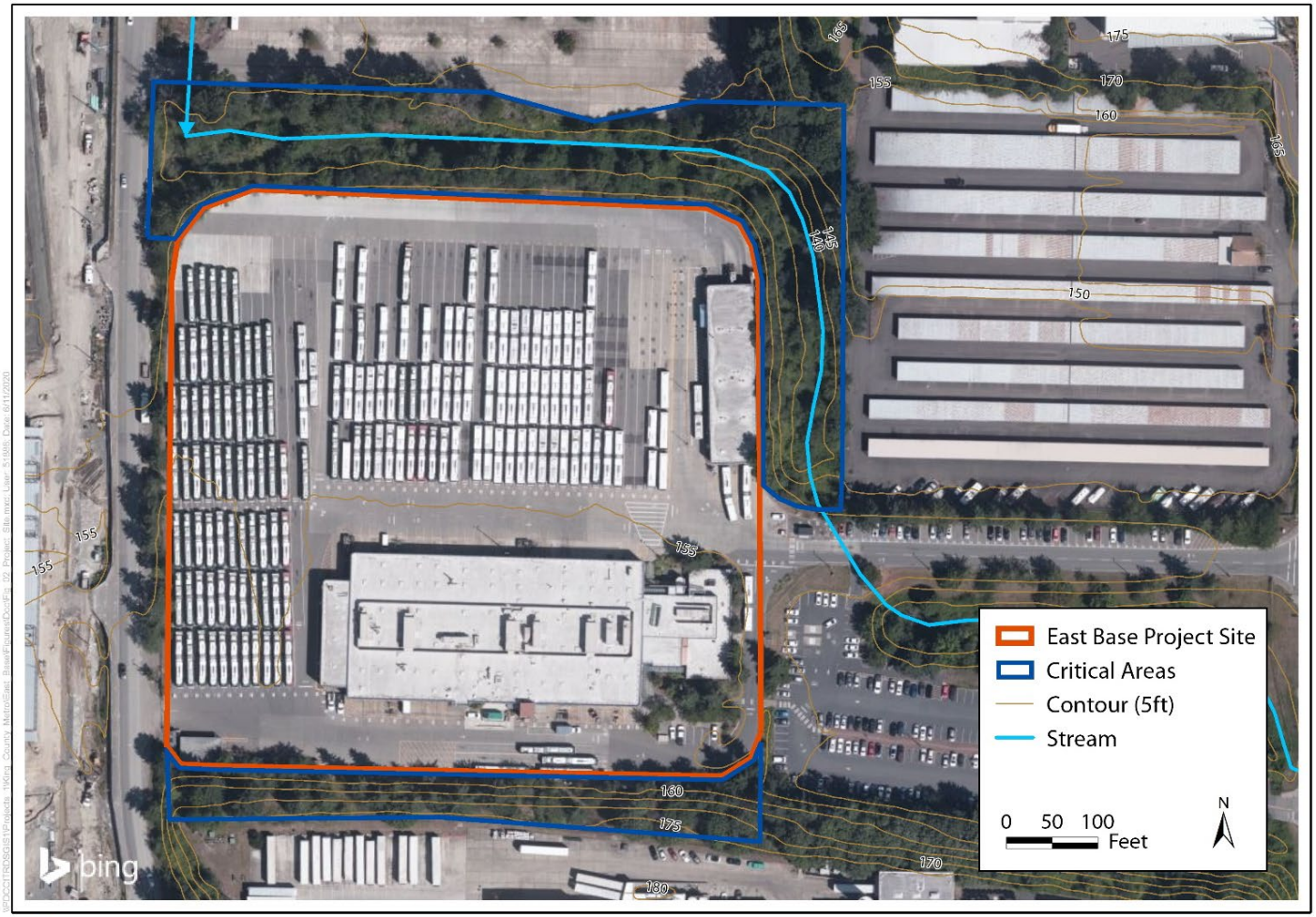

Figure 3. East Base Project Site and Adjacent Critical Areas

4.2.2 Hydrology

The project site is in the Cedar-Sammamish Watershed (Water Resource Inventory Area [WRIA] 8, hydrologic unit code [HUC] 17110012; King County 2020). Historically, this area was almost entirely valley bottom forests with associated floodplain wetlands (Collins et al. 2003). Currently, the Kelsey watershed subbasin is largely developed, with 12% remaining as forested and less than 2% wetlands remaining (King County 2018).

The principal hydrological driver within the area is precipitation that drains into the West Tributary from surface or groundwater pathways. Large storm events result in the tributary overtopping and flooding lower terraces along the creek. Runoff from these storm events is likely magnified due to the high concentration of hard surfaces surrounding the creek (USGS 2012). Prior to the field survey, precipitation was normal when compared to historical conditions (Appendix F, WETS Tables).

The project site is outside of the 100-year floodplain based on the Federal Emergency Management Agency (1995) *Flood Insurance Rate Map for King County Washington Incorporated Areas*.

4.2.3 Natural Resources Conservation Soil Survey

The project site has two mapped soil units (Appendix B, Figure A). Soil Unit Sk, Seattle Muck, is mapped in the northern portion of the project site, along the West Tributary. This soil is found in depressions and formed from grassy organic material. It is frequently flooded, poorly drained, and considered hydric. The southern portion of the project site is mapped as AmC, Arents, Alderwood material, 6% to 15% slopes. This soil is formed from basal till and found on glacial till plains. It is rarely flooded and is well drained; it is not considered hydric.

4.2.4 Steep Slopes

A steep slope was observed along the southern boundary of the project site. This area was also documented in the City of Bellevue Critical Geologic Hazards Map (City of Bellevue 2018b). A study conducted by Landau Associates, Inc. (2001) determined the native subsurface is glacial till or recessional outwash. During initial development of the property, cuts were made along the southern portion, which may have then been used to raise the northern elevation up to 13 feet. In general, transition from cut to fill runs diagonal across the site from northwest to southeast (Appendix I, Geotechnical Report; Landau Associates, Inc. 2001). No slope stability issues or landslide hazards were identified as part of this study (King County 2020). Additionally, portions of the northern boundary were documented as steep slopes in the City of Bellevue Critical Geologic Hazards Map (City of Bellevue 2018b). A technical geologist was utilized to determine if performance standards for steep slopes are met with no impact, on site or off site, from the proposed projects. The 2020 Yard Lighting Replacement – King County Metro East Base report by the Riley Group found no signs of "rotational failures, tensions cracks, or exposed soil surfaces indicating previous major landslides activities on the slope surface" (Appendix J). Possible impacts from the projects and mitigation measures for steep slopes are discussed below (Chapter 5, *Impacts and Mitigation Assessment*).

4.2.4.1 Required Buffers and Structural Setback

Based on City of Bellevue Ordinance Codes discussed in Chapter 2, from the toe of slope, a 75-foot setback with no mandatory buffer is required along the southern boundary of the project site.

Additionally, a 50-foot buffer is required on the northern boundary of the project site (Figure 4). These buffers and structural setbacks are entirely contained within the East Base Yard bus parking area. As described immediately above, this area has been cut and filled but has also been shown to be stable with no historical evidence of landslides or other geologic instabilities. These buffers are likely to be eligible for exclusion since East Base was initially built in 1977.

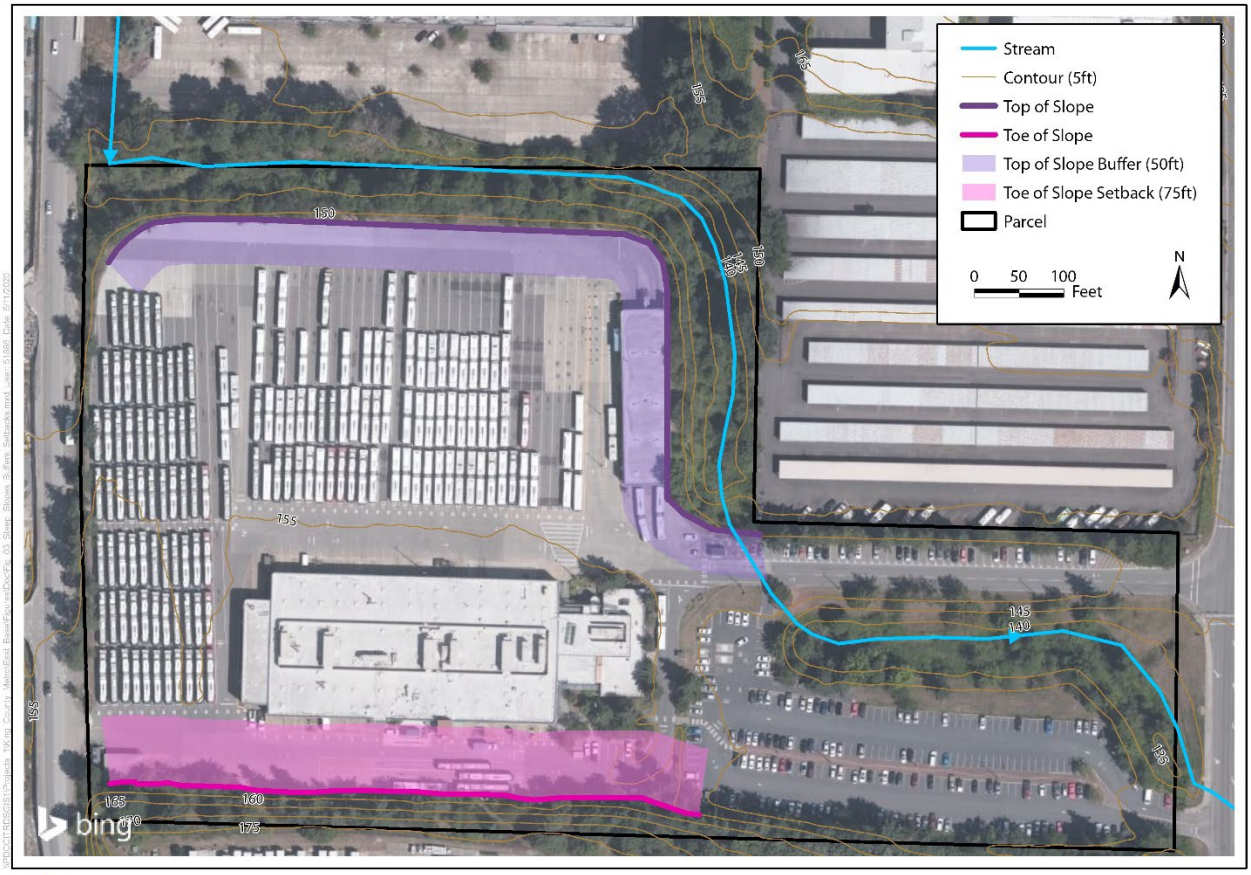

Figure 4. Steep Slopes and Associated Buffers and Setbacks

4.2.5 Wetland and Stream Inventories

The NWI maps the West Tributary as a seasonally flooded scrub-shrub wetland (Appendix B, Figure B). The City of Bellevue maps the West Tributary as a stream in its GIS Streams shapefile (City of Bellevue 2018a). A *West Tributary Habitat Assessment* by Tetra Tech (2016) for the City of Bellevue determined the tributary was an F-type, or fish bearing, for the entire reach. King County iMap (King County 2020) also documents the West Tributary immediately north of the project site.

Historically, the entire parcel was a forested wetland with the West Tributary running from the northwest parcel corner through to the southeast. During initial East Base construction, the West Tributary was relocated to its current course to the north (Landau Associates, Inc. 2001). This historical watercourse is mapped in the King County iMap, Environmentally Sensitive Areas, Streams GIS layer as an unidentified stream (Appendix B, Figure C).

4.2.6 Fish and Wildlife Habitat

The WDFW Priority Habitats and Species (PHS) map documents resident coastal cutthroat (*Oncorhynchus clarki*) occurring within and migrating through the site (Appendix B, Figure D; WDFW 2020a). WDFW SalmonScape also mapped Chinook (*Oncorhynchus tshawytscha*), coho (*Oncorhynchus kisutch*), and steelhead (*Oncorhynchus mykiss*) accessible habitat in the West Tributary (Appendix B, Figure E; WDFW 2020b). Although the 2016 *West Tributary Habitat Assessment* also determined the tributary to be appropriate fish habitat, it additionally stated that there was no spawning habitat along the projects reach and that habitat quality suffered from a dense reed canary grass (*Phalaris arundinacea;* Tetra Tech 2016). Finally, Ecology's *Puget Sound Watershed Characterization Project* notes the watershed basin is important for local salmonid habitat but has poor quality wetland, floodplain, and terrestrial habitats for other wildlife (Appendix B, Figure F; Ecology 2019).

At the time of the field survey, ducks, robins, and chickadees were observed along the tributary. Large standing and fallen trees were noted beside the streambed. Possible beaver and insect activity were noted on standing dead trees (Appendix G, Photo Log). Plant diversity was moderate in the riparian corridor with 24 different plant species observed, most in the shrub layer. Plant diversity could be even greater later in the season when the herb layer becomes more established. Eleven plant species were documented along the southern steep slope, most in the tree layer and as weedy herb species (Appendix H, Study Area Plant List). During a Spring 2020 meeting with King County Metro, a deer was observed by Integrity Energy Services, Co. on the southern border steep slope. Outside of the riparian corridor and steep slope, the project site is almost completely paved, with a small service building and larger administrative building on site. A narrow landscaping strip of ornamental grass and Pacific madrone (*Arbutus menziesii*) borders the top of bank along the north. In summary, although the West Tributary does provide fish habitat, the overall project site habitat potential is low because it is largely developed and used for bus parking.

Finally, according to the Washington Natural Heritage Program (DNR 2019), no threatened or endangered plant species are documented within or near the site.

4.3 Wetland and Stream Delineation Results

The study area was surveyed March 27 and April 2, 2020. One wetland unit was identified, and the West Tributary OHWM determined. Figure 5 shows the delineated wetland, West Tributary OHWM, and all sample locations (Appendices C and D).

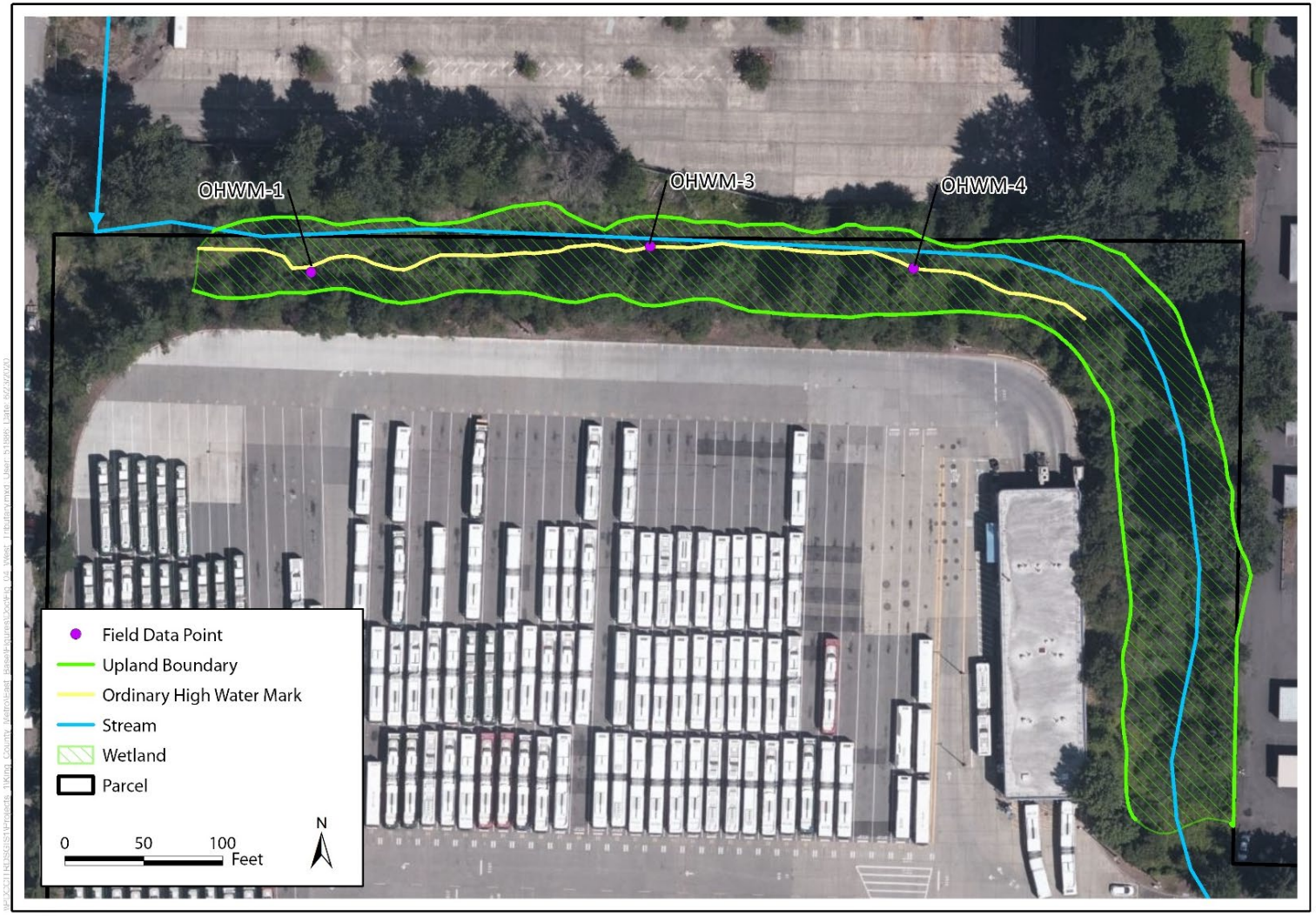

Figure 5. West Tributary OHWM Determination, Wetland Delineation, and Sample Plots

4.3.1 Wetland EB1, PFO1C (1.21 acres)

A hydrologically connected, seasonally flooded freshwater forested scrub-shrub wetland was identified within the study area. The wetland is comprised of a riverine wetland on a low terrace immediately adjacent to the West Tributary of Kelsey Creek and a slope wetland on a bench further upslope to the south. Because these areas are hydrologically connected—water flows in one direction from the upper bench through the lower terrace, either as surface or groundwater, and into West Tributary—they are treated as one wetland unit (Hruby 2014).

4.3.1.1 Vegetation

There are two vegetative communities within the wetland unit. The vegetative community along the low terrace has an herb layer dominated by reed canary grass; the second, on the bench upslope, is a shrub-dominated assemblage with no herb layer present. The tree layer was dominated by red alder (*Alnus rubra*) for both communities.

Shrubs along the low terrace were mostly present on the south side of the plots, closer to the toe of the slope. This layer was dominated by red osier dogwood (*Cornus alba*) and Himalayan blackberry (*Rubus armeniacus*). Common rush (*Juncus effusus*) and cattails (*Thypha sp.*) were also observed.

Vegetation upslope was dominated by red osier dogwood, Himalayan blackberry, and Indian plum (*Oemleria cerasiformis*) in the shrub layer. Patches of Douglas' Meadowsweet (*Spiraea douglasii*) and vine maple (*Acer circinatum*) were also noted. Although no herb layer was present, this is most likely due to it still being early in the growing season.

The eastern adjacent wetland vegetative community appeared to be lower quality than the northern wetland area. It was dominated by a Himalayan blackberry thicket with English Ivy (*Hedera helix*) observed along the upper slopes and growing on Pacific madrone (Appendix G).

All plants were OBL, FAC, or FACW, except Indian plum and English Ivy, which are FACU. Both plant communities meet the Corps' criteria for hydrophytic vegetation based on the dominance test.

4.3.1.2 Soils

As mapped by the NRCS, the lower terrace is comprised of muck, or soils with a high concentration of organic matter that is slowly decomposing (SP-1, Black Histic [A3] indicator). The upslope bench was comprised of very dark grayish brown (10YR 3/2) silt loam in the upper layer to gray (10YR 5/1) or very dark gray (10YR 3/1) sandy loam starting at approximately 5.5 inches bgs. Redox concentrations of at least 10% were observed in the lower layer matrix (SP-3, SP-4, and WET3.3). Rounded cobbles were present throughout the profile. These soils meet the hydric soil indicator for Depleted Below Dark Surface (A11) and the Corps' criteria for wetland soils.

4.3.1.3 Hydrology

Hydrology within the wetland is unidirectional and primarily driven through precipitation. Storm events cause the West Tributary to overtop onto the low terrace and/or produce uphill runoff that settles onto the upslope bench or lower terrace. This water drains into West Tributary either as surface water or groundwater.

A high water table of 9 inches or less bgs was observed in soil pits SP-1, SP-4, and WET3.3 with saturation at 11 inches bgs in SP-3. These are both primary hydrological indicators and meet the Corps' criteria for wetland hydrology.

4.3.1.4 Adjacent Uplands

The adjacent upland area was near the top of bank, roughly 18 feet from the East Base curb perimeter. Vegetation was dominated by red alder and Pacific madrone (UPL) in the tree layer, Himalayan blackberry in the shrub layer, and no understory. All plots met the Corps' criteria for hydrophytic vegetation based on the dominance test. SP-5 and SP-8 were similar to the hydric soils described in Section 4.3.1.1 and met the Corps' criteria for wetland soils. SP-2 had very dark brown soil silt to sandy loam (10YR 2/2) to 8 inches bgs. Some redox concentrations were observed from 8 to 17 inches bgs within gray (10YR 5/1) silt loam or very dark gray (10YR 3/1) sandy loam. However, the depleted layers did not meet the required thickness and were located too deep below the surface to be a hydric soil indicator. No surface water, high ground water table, saturation, or any other primary hydrological indicators were observed in upland plots.

4.3.1.5 Functional Assessment

To assess the function of the wetland unit, the boundaries were extended outside of the study area to the north–south bend of the creek until it is piped under a parking lot (Figure 5; Appendix B).

Water Quality and Hydrology

The wetland unit has dense vegetation along a low, wide terrace and is in a highly developed setting, resulting in a moderate to high potential to improve water quality and reduce flooding and erosion. However, since there are no flooding or pollutant problems in the project vicinity, the value to society is low.

Habitat

Although the wetland unit has a fair amount of plant diversity and special habitat features, it is also dominated by invasive plant species and isolated in a highly developed setting, so it has limited ability to provide quality habitat within a landscape setting, resulting in a moderate value to society.

Summary

The wetland unit was found to be a Category III due to its moderate to high level of function within an isolated and disturbed setting. Wetland Rating summary calculation provided below:

Improving Water Quality – 6
Hydrologic – 7
Habitat – 5
Total – 18

4.3.1.6 Required Buffers and Structural Setback

Based on City of Bellevue Ordinance Codes discussed in Chapter 2, a Category III wetland with a habitat score of 5 is required to have a 110-foot buffer, with an additional 15-foot structural setback. Given East Base was established in 1977, these requirements may exclude the existing footprint

(King County 2020). However, any new development or construction must adhere to or mitigate for impacts within these areas. Full buffer extent is shown in Figure 6. This buffer does contain a narrow vegetated corridor on either side of the wetland but is largely in paved or developed areas such as the East Base Yard bus parking area to the south, public storage to the east, industrial bakery to the north, and 120th Avenue NE to the west. As a result, the buffer provides minimal protection or functional lift in terms of wetland habitat, water quality improvement, or hydrology.

Figure 6. Wetland and Associated Buffers and Setbacks

4.3.2 West Tributary to Kelsey Creek (951 linear feet)

The West Tributary to Kelsey Creek appeared to have a sandy channel bottom ranging from 1 to 3 feet in width through the study area. Along the upper section, OHWM follows the same elevation as the riverine wetland (SP-1, OHWM1). Near the middle of the study area, the channel flows through a spillover, or bottleneck, creating a large pool upstream and a narrower low terrace downstream (OHWM3). The OHWM widens again approximately 150 feet downstream from OHWM3, cutting across the toe of a slope before making the north–south bend at the end of the study area (OHWM4).

OHWM was determined by undeveloped soil profiles, incised banks, and lack of vegetation below OHWM; a leaf litter wrack line, soil high in organic matter, sand deposits, and undercut tree roots along OHWM; and break in slope, change of vegetation—such as presence of Himalayan blackberry and red alders—and mineral soils above OHWM.

4.3.2.1 Required Buffers and Structural Setback

Based on City of Bellevue Ordinance Codes discussed in Chapter 2, all new construction on developed or undeveloped areas along the West Tributary, Kelsey Basin are required to have a 50-foot buffer from the top of bank with an additional 20-foot structural setback from the buffer (see Figure 7). As part of the permitting process, any development within these areas must mitigate for possible impacts from the proposed projects. This buffer lays entirely within the East Base Yard bus parking area and provides minimal wildlife habitat or hydrological improvements to West Tributary of Kelsey Creek.

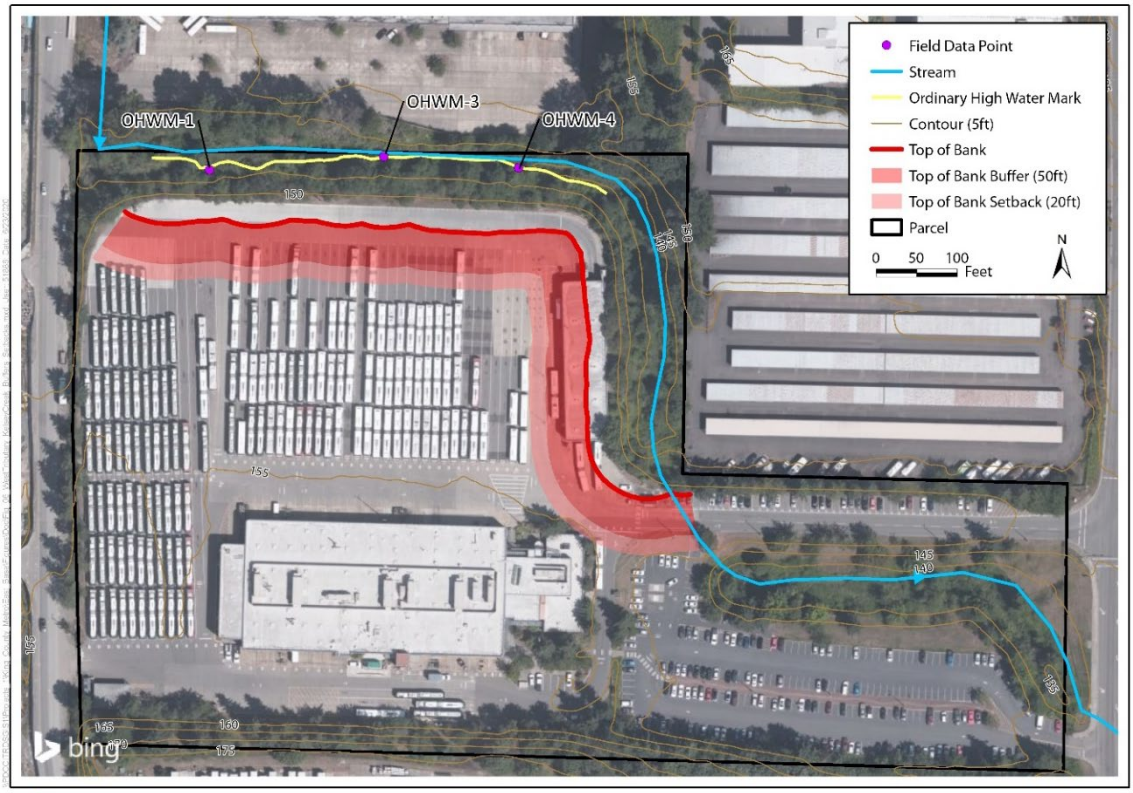

Figure 7. West Tributary to Kelsey Creek and Associated Buffers and Structural Setbacks

4.3.3 Jurisdictional Ditches

No roadside ditches were observed in the study area.

4.4 Limitations

The results and conclusions expressed herein represent ICF's professional judgment based on the information available; no other warranty, expressed or implied, is made. Final determinations for wetland boundaries and categories are the responsibility of the regulating resource agencies. Wetland boundaries can be altered by changes in land use, hydrology, or climate. If a physical change occurs in the basin, or if 3 to 5 years pass before the projects are constructed, another wetland delineation should be conducted.

Chapter 5
Impacts and Mitigation Assessment

5.1 Temporary Impacts

No temporary filling, dredging, or discharge into the West Tributary or associated wetland would occur as part of the projects' construction. The projects are designed to avoid any work below the OHWM of the West Tributary. No in-water work or work within the wetland footprint is required or would occur. Ground disturbance activity is likely within the top and toe of steep slopes. See Figure 8 for ground disturbance and other demolition and boring locations in relation to critical area boundaries, buffers, and setbacks. Due to scale, the NGW Cabinet in the below figures includes the NGW cabinet, concrete pad, bollards, antenna pole attached to hostler shack, and conduit installation. This figure assumes the East Base Yard, built in the 1970s, qualifies for a wetland and steep slope exclusion of buffers and setbacks from the perimeter cement curb inward toward the established bus parking area and operations and maintenance building (LUC 20.25H.095.D.1.b and LUC 20.25H.120.B.2, respectively).

During construction, clearing, grading, excavating, soil stockpiling, and other construction activities that temporarily remove vegetation, reduce soil stability, or increase soil erosion could occur. Trenching or directional boring for conduit replacement/installation, excavation for the NGW cabinet's concrete pad, and boring for floodlight concrete footings would also require soil disturbance. Soil disturbance would occur on a slight slope within fill material. Best management practices and temporary erosion sediment control (TESC) measures would be implemented. Lay-down construction zones would be kept to the paved parking area. All construction material would be stored to the south side of a chain link fence separating Kelsey Creek and the associated wetland from the East Base Yard. All demolition debris will be taken offsite and disposed of at a permitted facility.

Groundwater, estimated to be approximately 10 feet below ground surface in some project areas, may be encountered during pole installation. There is a potential risk that groundwater quality could be impaired due to release of, or exposure to, gasoline, oil, hydraulic fluids, and related materials from use and operation of construction equipment. However, during construction this risk would be mitigated as any encountered groundwater would be removed by vacuum truck and taken to a permitted facility for treatment and disposal.

Fugitive dust emissions may also occur because of clearing, excavating, and other construction activities. Potential for fugitive dust emission would be higher during dry, warm weather conditions when wind and construction equipment create more dust. Areas of ground disturbance will be watered as necessary to reduce fugitive dust.

Emissions from construction vehicles and equipment may temporarily affect local air quality during construction of the projects. The emission quantities have not been estimated; however, they are not expected to exceed local emissions standards.

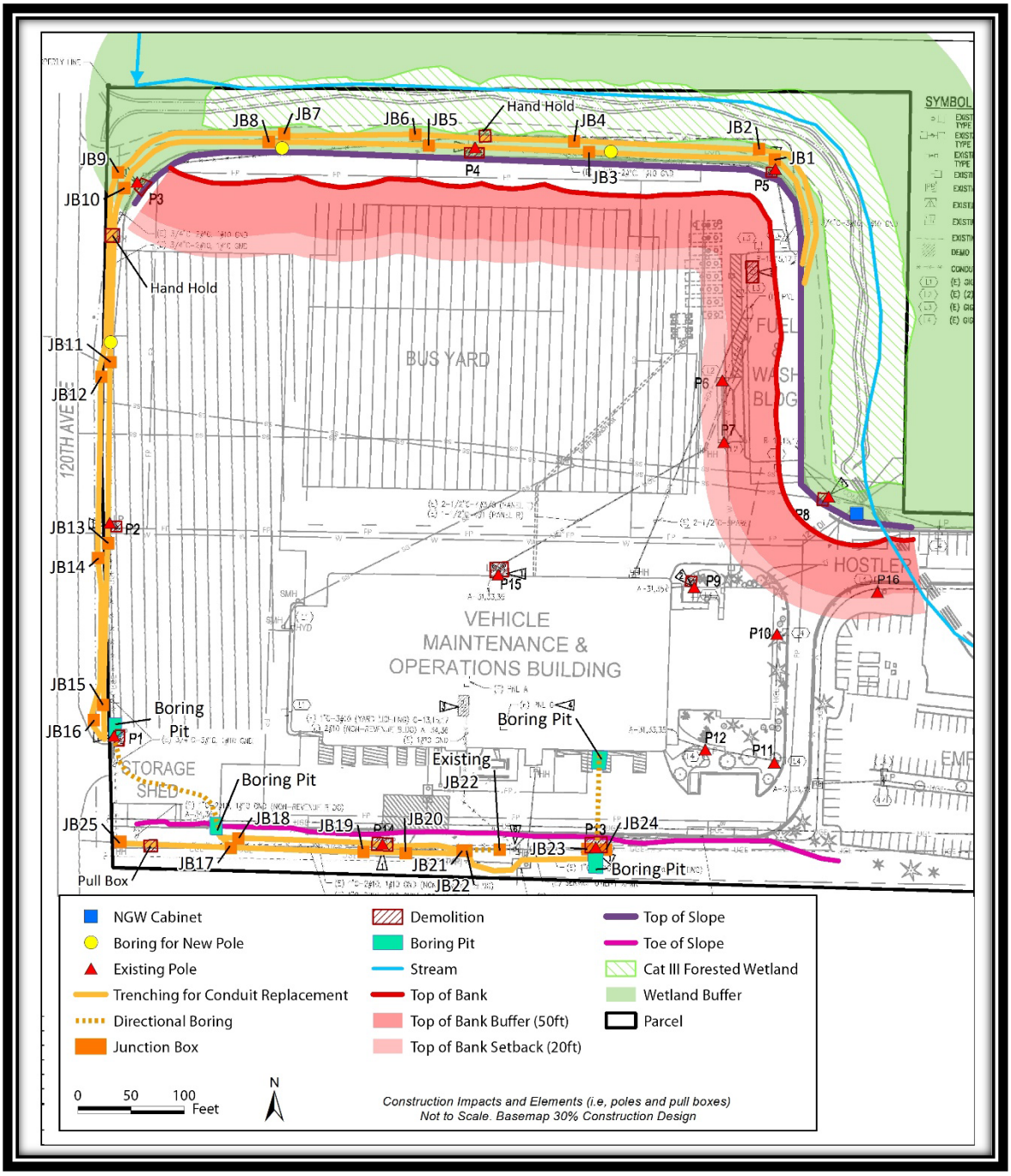

Figure 8. Temporary Impacts During Construction (With Buffer and Setback Exclusions)

5.3 Permanent Impacts

During operations, light fixtures, APs and floodlight poles would not affect air quality or create emissions. Vehicular emissions would also not increase during the operation of the projects. Operation of new and replaced lighting fixtures, APs, and NGW cabinet would not result in any permanent filling, dredging, or discharge into the West Tributary or associated wetland. The projects would remain above OHWM but would be within top of bank. New poles, junction boxes, and a NGW cabinet would also be within the top of steep slopes and possibly wetland buffers. See Figure 9 for the location of new aboveground structure locations (i.e., new poles, junction boxes, and a NGW cabinet) in relation to critical area boundaries, buffers, and setbacks.

Based on the above, the proposed projects would require modification to the application of the following City of Bellevue Critical Area Ordinance code to these projects.

- **LUC 20.25H.075.C.1.c: Designation of Critical Areas and Buffers, Streams, West Tributary, Kelsey Basin**. However, performance standards outlined in LUC 20.25H.080.A would be followed (light angled away from stream). Additionally, mitigation through minimization of impacts to the West Tributary would be accomplished by design measures discussed below (LUC 20.25H.085).
- **LUC 20.25H.095.D.1.b: Designation of Critical Areas and Buffers, Wetlands, Buffers and Setbacks on Sites with Existing Development**. Buffer averaging was considered but found not to be possible since it would need a 75% or greater width reduction of the required buffer dimensions (LUC 2025H.095.D.2.a.vii). However, performance standards outlined in LUC 20.25H.100 would be followed and implemented (light angled away from wetland). Additionally, mitigation through minimization of impacts to the wetlands adjacent to and within 300 feet of the project area would be accomplished through design measures discussed below (LUC 20.25H.105).
- **LUC 20.25H.120.A.2: Designation of Critical Areas and Buffers, Geologic Hazard, Steep Slopes**. Performance standards outlined in LUC 20.25H.125 would be followed and are discussed in further detail below. Additionally, a geotechnical evaluation has been completed by a licensed engineer or geologist to determine potential impacts from the projects prior to finalizing construction plans (LUC 20.25H.145).

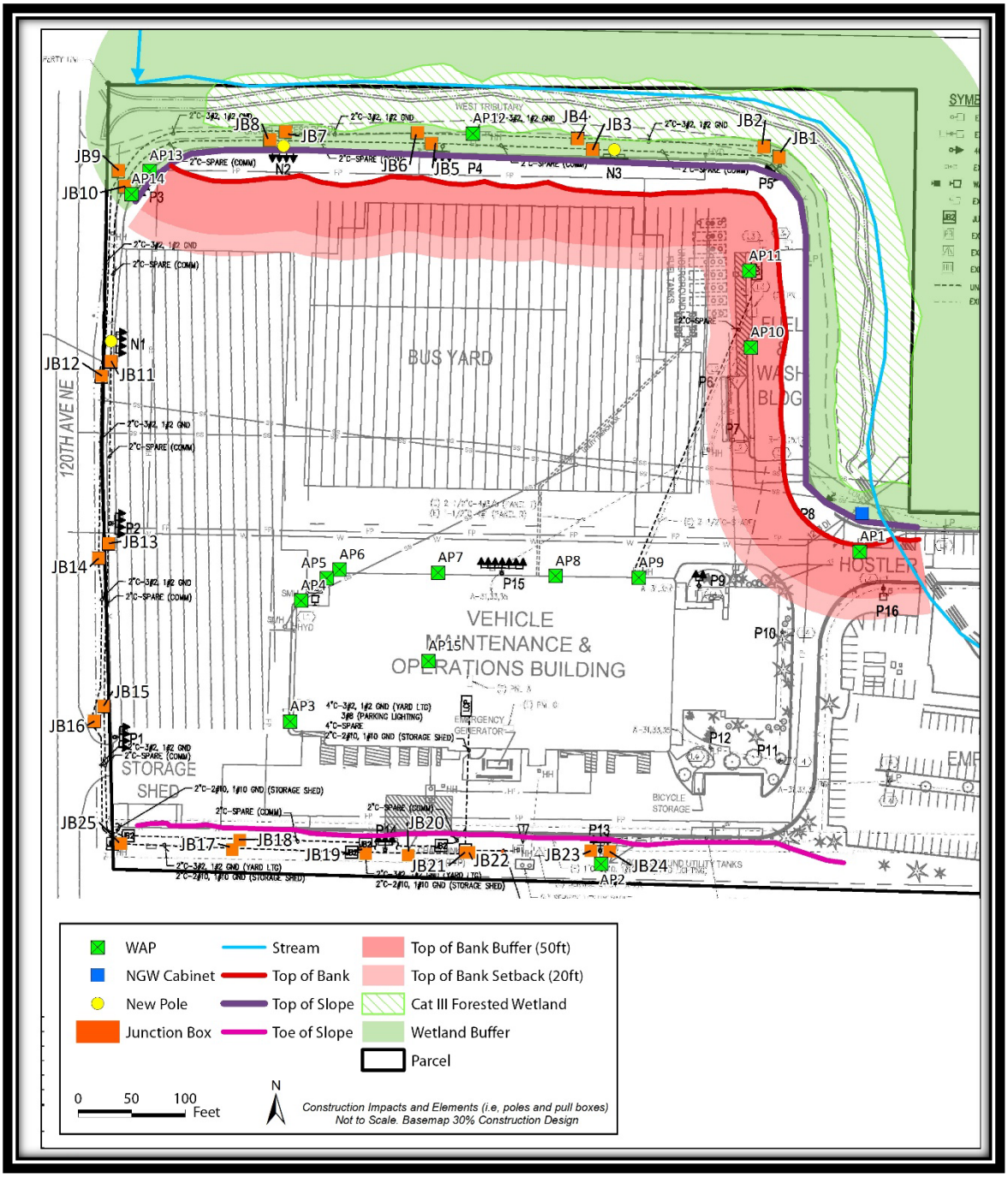

Figure 9. Permanent Impacts (With Buffer and Setback Exclusions)

5.3.1 New Permanent Structures

Only new aboveground structures were considered as permanent impacts because replaced floodlight poles occupy the same footprint as the original structures—36-inch diameter or less. Similarly, conduit replacement would occupy the same area as before, with the final elevation and contour returned to preconstruction conditions. APs would be mounted to existing structures, such as floodlight poles or exterior walls, and would not increase hard surfaces or otherwise affect critical areas. Based on City of Bellevue designation for critical areas (20.25H), along the north boundary two new floodlights, ten new junction boxes, and the new NGW cabinet would be within the top of a steep slope (LUC 20.25H.120; City of Bellevue 2018b), top of bank for West Tributary to Kelsey Creek (LUC 20.25H.075), and a wetland buffer (LUC 20.25H. 095.D.1a). Along the southern boundary, nine new junction boxes would be within the toe of a steep slope (Figure 9; LUC 20.25H.120; City of Bellevue 2018b). The new floodlights would be sunk approximately 12 feet below grade and have a 36-inch diameter, which would replace landscaping grass, soil, or gravel to that extent of volume and surface area. The new junction boxes measure 22.5 inches wide by 33 inches long and are typically 1 foot deep and flush with ground surface; these would also replace landscaping grass or gravel. The new concrete pad for the NGW cabinet measures 6.1 feet long by 3.7 feet wide and would be buried roughly 3.5 feet below ground surface; this structure would replace landscaping grass or weedy vegetation. These structures would increase hard surfaces and may reduce water infiltration and increase stormwater runoff in the area. However, this increased area is minimal in comparison to the remainder of the project area (0.044% of the project area based on a 391,654-square-foot area in the western portion of the East Base property), as well as when compared to the surrounding area, which is highly developed.

The new permanent structures would be compliant with City of Bellevue performance standards (LUC 20.25H.080.A, LUC 20.25H.100, and LUC 20.25H.125). The most applicable of these are for steep slopes (LUC 20.25H.125). Specifically, all new poles and junction boxes will minimize alteration of the natural slope contour and would work to preserve the natural landform (LUC 20.25H.125.A and B). In addition, as mentioned in Section 4.2.4*, Steep Slopes,* the Lighting Project underwent a geotechnical evaluation by an engineer or geologist licensed in the State of Washington who determined there would be no adverse effects due to construction or operation of the project (LUC 20.25H.145; Appendix J). Based on the overlap between the Lighting Project and the NGW Project construction and operation areas, it is reasonable to apply the geotechnical conclusions for the Lighting Project to the NGW Project.

The new permanent structures within the wetland buffer are surrounded and will replace landscaping grass, which has low habitat potential and a higher runoff coefficient than woodlands or native grasses (ODOT 2005). These buffer functions are unlikely to be impacted by the new permanent structure and improve or change over the life of the projects.

Similarly, the new permanent structures within top of bank for West Tributary to Kelsey Creek are surrounded by landscaping grass which provides little to no riparian or aquatic habitat, hydrological protection, or benefit to the waterway. The West Tributary to Kelsey Creek will have little to no impact from the new permanent structures.

5.3.2 Increased Lighting

Of the existing eight floodlights to be replaced, six are within critical areas for steep slopes, top of bank for the West Tributary, and a wetland buffer. Of the three proposed new lighting structures,

two are within critical areas for steep slope, top of bank for the West Tributary, and a wetland buffer.

Washington state requires an average of 3.0 fc 30 inches above surface level with no single light measurement falling below 1.5 fc in the averaged area (WAC 296.800-210). Currently, the East Base Yard has an average light level of 1.73 fc, with a minimum single light measurement of 0.4 fc, which is below Washington State requirements. After implementation of the Lighting Project, the average light level would be raised to 4.74 fc, with the minimum single light measurement, 30 inches above surface level, measuring 1.6 fc. This is a 3.01 fc net gain average across the East Base (Reynolds pers. comm.). However, additional light could negatively affect the fish-bearing West Tributary and wetland/riparian corridor habitat. Streetlamps have been shown to increase predation due to loss of protective cover during the night, when fish frequently migrate and feed (FishBio 2018). Given this potential impact, the Lighting Project would be compliant with City of Bellevue performance standards for stream, top of bank, and wetland buffers with light being directed away from the stream channel and wetland (LUC 20.25H.080.A.1 and LUC 20.25H.100.A). Impacts would be further reduced/mitigated through design measures discussed below.

5.3.3 Cumulative Impact

Per City of Bellevue LUC 20.25H.250.B.4, cumulative impacts from the proposed projects were considered. The proposed projects would have minimal impact on steep slopes, the West Tributary of Kelsey Creek, and the associated wetland due to new aboveground structures and additional light. The new aboveground structures are relatively small and do not increase total hard surfaces in comparison to the remainder of the project area and surrounding area, which are highly developed and largely comprised of impervious surfaces. Increased lighting would not have an impact on steep slope conditions, and the new aboveground structures are unlikely to increase slope instability, especially after implementation of best management practices and other mitigation measures (see below). Finally, increased light or spillover would be mitigated through design measures below, resulting in a lower light level directed to the stream and wetland area than is currently present (see below).

5.3.4 Impacts on Critical Area Buffers and Setbacks

Currently, the West Tributary to Kelsey Creek buffers and setbacks are fully contained within the East Base Yard bus parking area. This paved surface does not provide any habitat or hydrological protection or benefit to the waterway. Similarly, the wetland buffer is largely within a highly developed setting providing minimal protection or functional lift for wetland habitat, hydrology, or water quality. The wetland buffer within the construction area is comprised of landscaping grass, which has low habitat potential and a higher runoff coefficient than woodlands or native grasses. In addition, construction and operation of the projects would occur within an area of the wetland buffer that has previously been developed with the existing underground conduits and floodlights. These buffer functions are unlikely to improve or change over the life of the projects. While project operations would not greatly improve the riparian corridor, the project impacts, due to new permanent structures or spillover lighting, would be reduced through application of performance standards discussed above. Additionally, applied mitigation design measures would result in lower light spillover than current conditions (see Section 5.3.2, *Minimization Measures*).

Although steep slope buffers and setbacks are likely to be excluded based on LUC 20.25H.120.B.2, it is worth noting these buffers and setbacks—50-foot buffer from top of slope and a 75-foot buffer from toe of slope—are both fully contained within the East Base Yard parking lot. This paved area is level and has been historically stable with no reported landslides, slumping, or other geologic instability. Figures 10 and 11 overlay all applicable buffers and setbacks over the temporary and permanent project elements, without exclusions.

5.4 Mitigation Measures

Potential impacts from construction and operation of the projects have been considered during the project design processes. Any impacts that cannot be avoided, addressed by construction design, or minimized will require further mitigation.

5.4.1 Avoidance

Construction activities have been sited to avoid work in or around jurisdictional waters to protect existing resources.

5.4.2 Minimization

Construction techniques would be implemented to reduce possible impacts from construction on steep slopes. Project-specific Stormwater Pollution Prevention Plans (SWPPPs) would be prepared to reduce or control erosion that might otherwise occur during ground-disturbing activities. Best management practices and TESC identified in the SWPPP would be followed to control the risk of erosion. In addition, existing vegetation would be preserved to the extent practicable. Erosion control and SWPPP practices would ensure no stormwater discharge or erosion into Wetland EB1 or the West Tributary of Kelsey Creek. The SWPPPs would include a de-watering plan to address the risk of contaminating groundwater, if encountered.

The projects would address and reduce air quality impacts by implementing such measures as covering loads, installing and maintaining construction area entrances and exits, and performing proper vehicle maintenance.

5.4.2.1 New Permanent Structures

The projects' placement of new poles, junction boxes, and a NGW cabinet should be such that there is minimal to no increase of geologic hazards at the project site or the surrounding area. The corresponding geotechnical report, per LUC 20.25H.145, investigates the impact of the Lighting Project on slope stability along the southern and northern boundaries. The report concludes slope stability would not be affected by construction or operation of the Lighting Project. The report also lists minimization measures and recommendations to be incorporated into the final design drawings and construction specifications, such as an TESC, use of structural fill, and a light foundation design (Appendix J). Though the geotechnical report was written specifically for the Lighting Project, given the NGW project area, the geotechnical report conclusions and mitigation measures can also be applied to this second project.

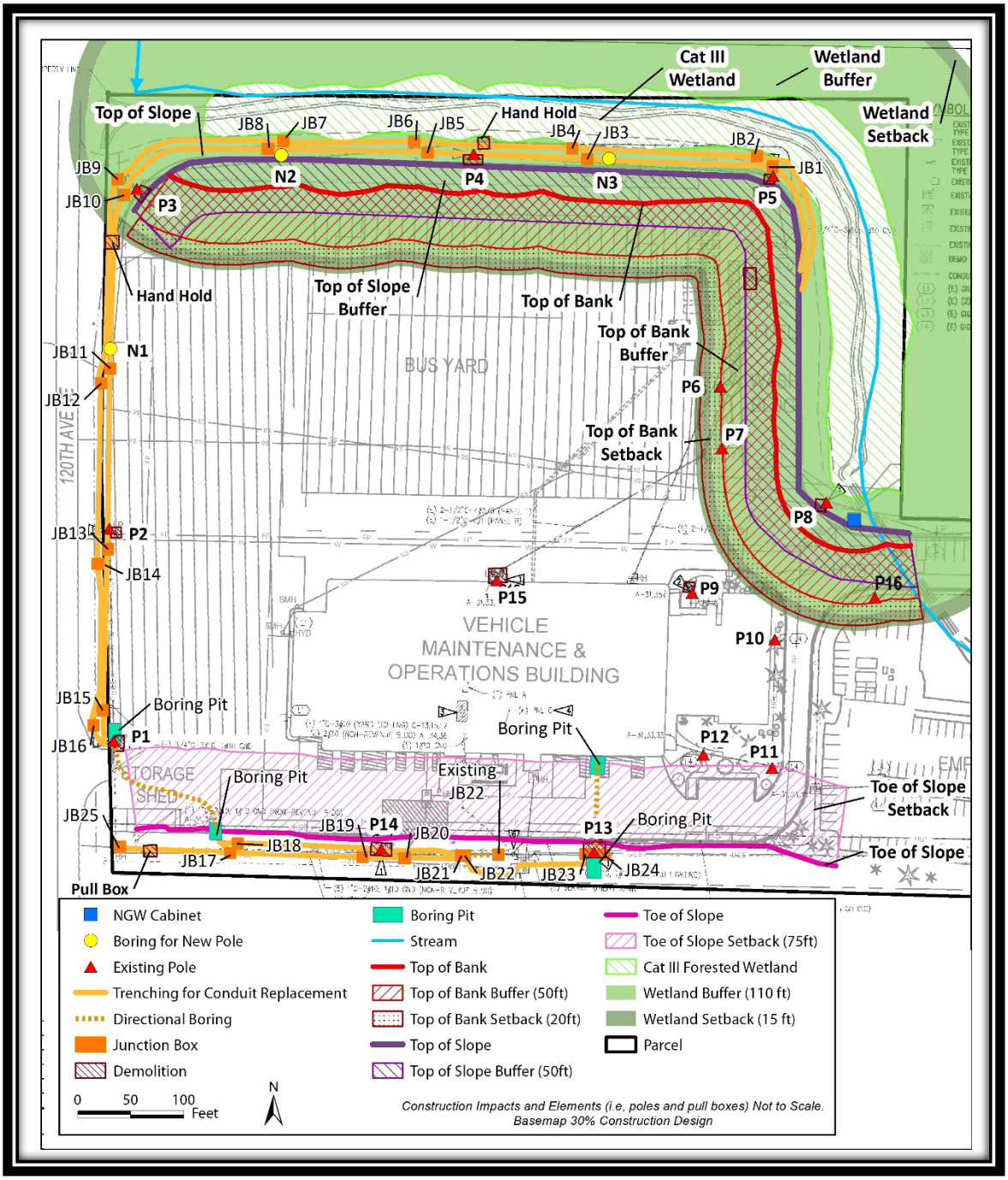

Figure 10. Temporary Impacts during Construction (No Buffer and Setback Exclusions)

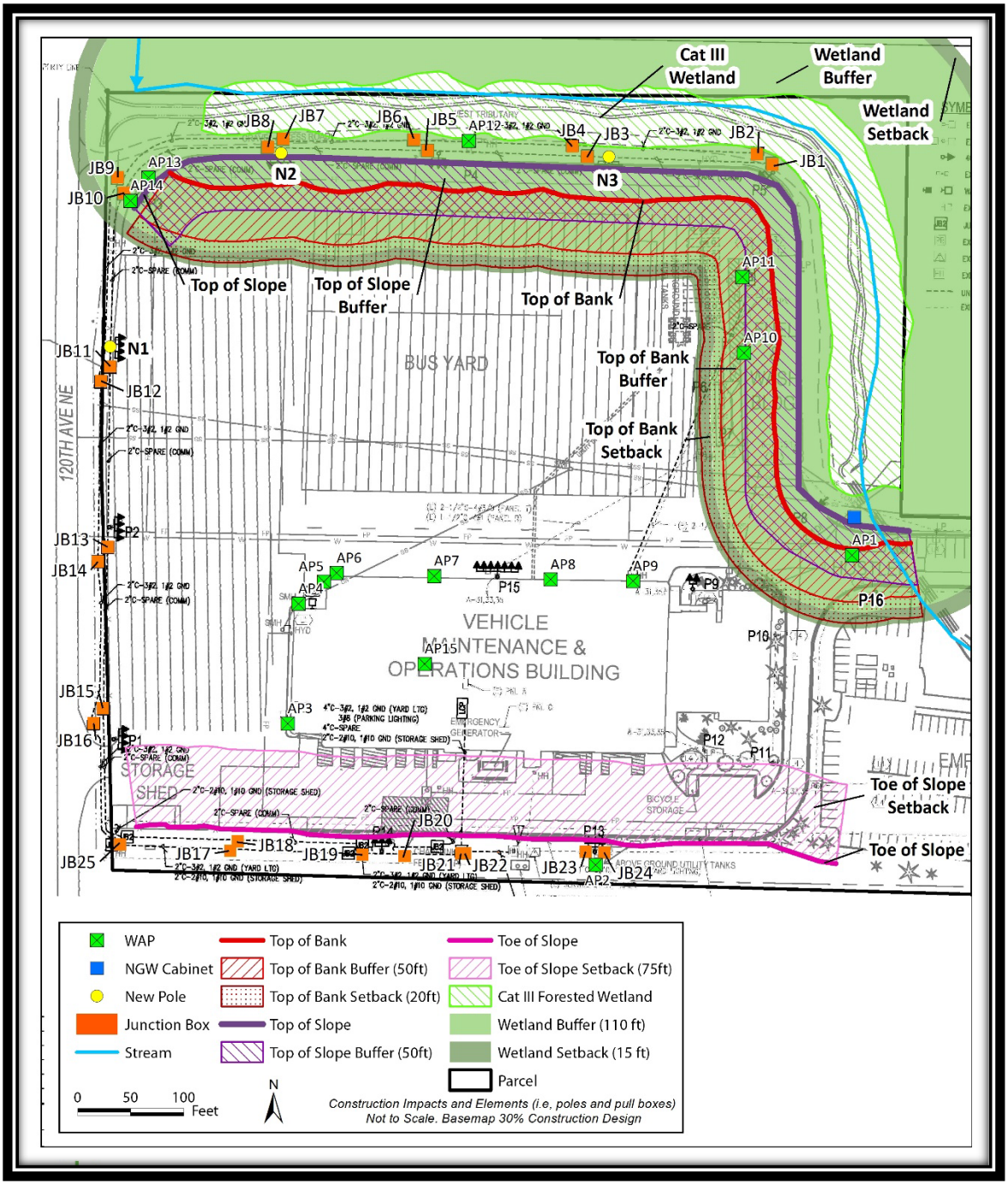

Figure 11. Permanent Impacts (No Buffer and Setback Exclusions)

For the siting of the replacement of existing floodlights and installation of new floodlights, design measures included placing poles within 5 feet of the existing bus yard curb line. The Lighting Project design would limit the locations of replacement poles to be as close as structurally possible to the existing light pole footprints. The intent of placing poles within 5 feet of the existing bus yard curb line and limiting replacement poles to the existing pole footprints is to minimize the siting impact and keep the poles as far away from the critical areas as possible. Similarly, the NGW project design ensures the NGW cabinet and concrete pad would be placed within 5 feet of the existing bus yard curb line to keep as far away from the critical areas as possible. In addition, the projects should not alter the contour of any existing slopes on site, and contractors should return any disturbed areas to preconstruction conditions.

5.4.2.2 Increased Lighting

Impacts from light and glare were considered during Lighting Project design. No additional light is expected to spill over along the southern boundary due to the steep slope acting as a barrier to the adjacent property. The amount of light reaching the West Tributary and associated wetland varies over the year depending on tree and shrub canopy. During the growing season, the impact from artificial light is reduced due to leaves blocking or filtering this light. This vegetative barrier is reduced in the late fall and winter when deciduous trees and shrubs lose their leaves. This annual difference in vegetative cover was considered during Lighting Project design and selection of the new light control fixture.

The Musco Total Light Control Fixture was selected based on its ability to minimize light glare and spillover by shielding light from above and behind the bulbs, as well as directing/focusing the beam onto the East Base. Based on modeling of this product, the anticipated unavoidable maximum spillover light levels during growing season near the West Tributary would range from 0.0 to 0.2 fc, compared to 0.1 to 0.7 fc from the existing LED lights (Figures 12 and 13). Near the West Tributary during the non-growing season (with reduced to no tree or shrub canopy cover), the anticipated unavoidable maximum spillover light levels from the Musco Total Light Control Fixtures would range from 0.0 to 0.5 fc, compared to 0.3 to 0.9 fc from the existing LED lights (Figures 12 and 14; King County Metro and Musco Engineering Associates 2020). As a result, the overall unavoidable maximum spillover light levels near the West Tributary are expected to decrease with the installation of the Musco Total Light Control Fixtures. Additionally, light fixtures would be angled to minimize spillover into critical areas (Appendix A).

Prior to installation, Musco Light Fixtures would be tested at the facility to ensure they meet expected spillover levels modeled. After installation, field measurements would be taken to verify required light levels are met. If requirements are not met, King County Metro would evaluate how to adapt/readjust light fixtures in order to meet requirements.

WITH TREES PLACED (GROWING SEASONS)

Footcandles	Fixtures		
	Original HID	Existing LED	New Musco
Max L1	0.2	0.1	0.2
Max L2	0.1	0.3	0
Max L3	0.1	0.4	0
Max L4	0.1	0.5	0
Max L5	0.1	0.5	0
Max L6	0.1	0.6	0
Max L7	0.3	0.7	0.1
Avg L1	0.06	0.05	0.01
Avg L2	0.05	0.13	0
Avg L3	0.05	0.23	0
Avg L4	0.07	0.35	0
Avg L5	0.09	0.24	0
Avg L6	0.09	0.33	0
Avg L7	0.12	0.28	0

Highest light levels in comparison per line.

WITHOUT TREES PLACED (NON-GROWING SEASONS)

Footcandles	Fixtures		
	Original HID	Existing LED	New Musco
Max L1	0.3	0.3	0.5
Max L2	0.2	0.4	0.2
Max L3	0.2	0.5	0
Max L4	0.2	0.6	0
Max L5	0.2	0.7	0
Max L6	0.2	0.8	0.1
Max L7	0.3	0.9	0.1
Avg L1	0.11	0.1	0.02
Avg L2	0.19	0.26	0.02
Avg L3	0.2	0.39	0
Avg L4	0.2	0.52	0
Avg L5	0.19	0.56	0
Avg L6	0.18	0.63	0.01
Avg L7	0.19	0.52	0.01

Max = Maximum
Avg = Average
L1 = East leg
L2 - L6 = Northeast Arc
L7 = North Leg

Figure 12. Modeling Comparison between Existing Conditions and Musco Light Fixtures

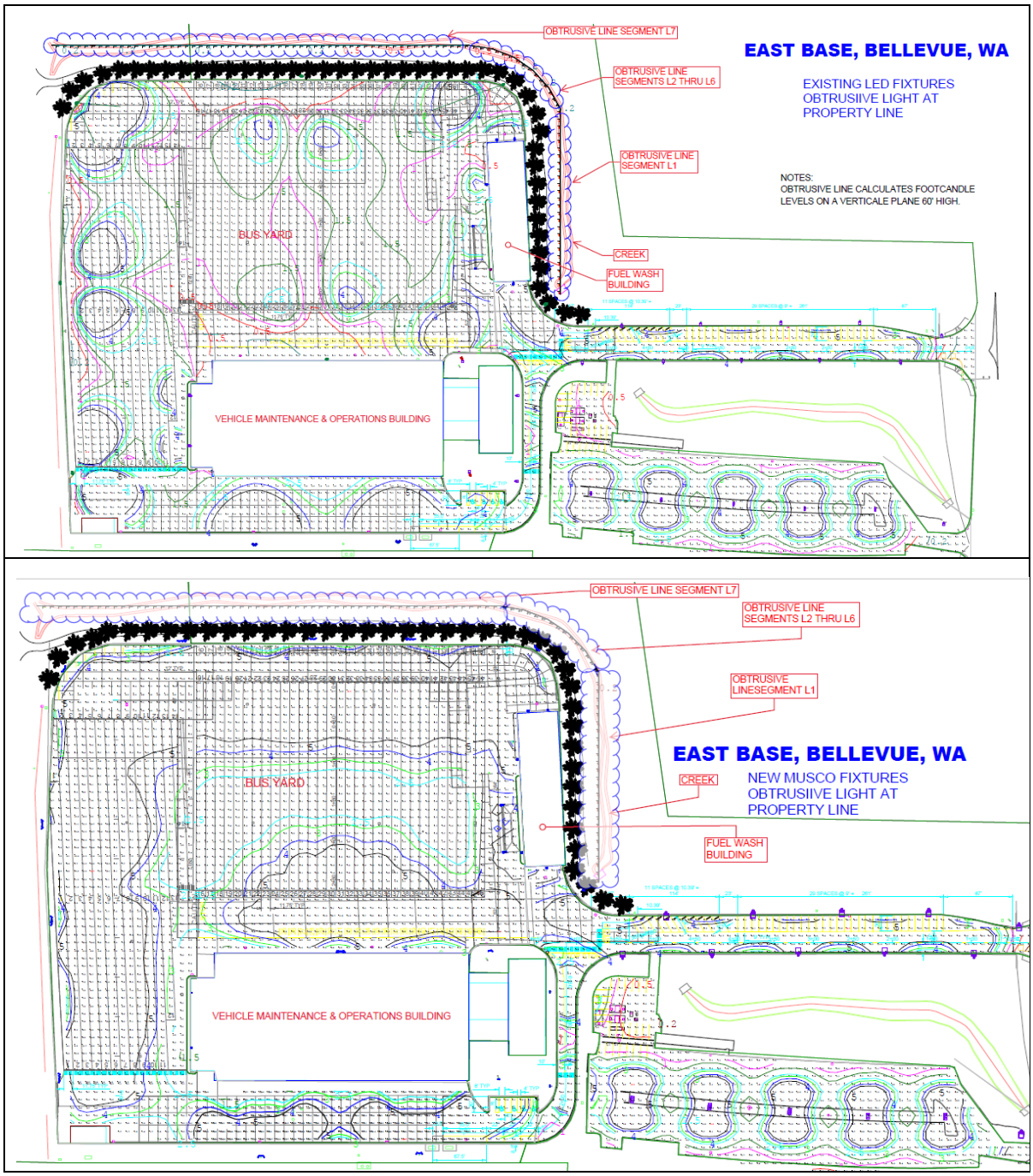

Figure 13. Obtrusive Light Comparison—Existing LED Obtrusive Light with Trees (top); Musco Fixtures Obtrusive Light with Trees (bottom)

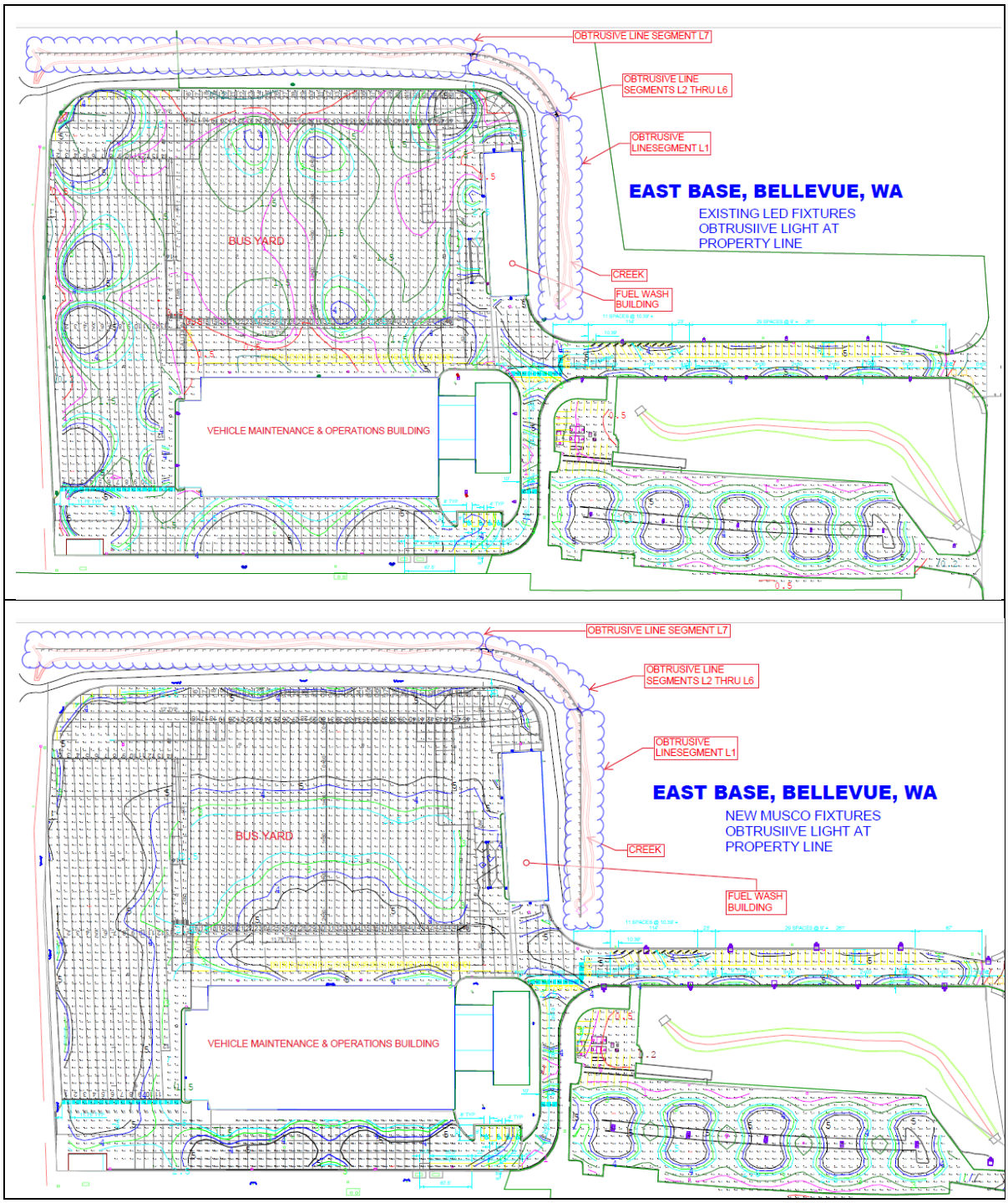

Figure 14. Obtrusive Light Comparison—Existing LED Obtrusive Light without Trees (top); Musco Fixtures Obtrusive Light without Trees (bottom)

5.4.3 Available Mitigation Measures

To best address impacts from the Lighting and NGW Projects, all proposed available mitigation measures would occur within the critical areas or associated buffers in the project property. No off-site mitigation is proposed.

5.4.3.1 New Permanent Structures

Placement of the two new floodlights, ten junction boxes, and one NGW cabinet with a concrete pad within the wetland buffer and top of bank for Kelsey Creek may require additional mitigation. Because the new structures would replace landscaping grass—which has low habitat potential and higher runoff coefficient than other groundcover—the potential for impacts on, changes to, or reduced function of the wetland buffer within the project area would be low. Possible wetland buffer mitigation could include removal of invasive species, such as Himalayan blackberry and English ivy along the wetland buffer in the project property. This removal would improve habitat in the riparian corridor. Impacts on Kelsey Creek could also be mitigated through removal of reed canary grass along the creek banks, which would improve riparian habitat.

5.4.3.2 Increased Lighting

If the spillover light and glare is not fully mitigated through design minimization measures, establishing a vegetated buffer may be required. This vegetative buffer would be created between the northern critical areas and installed light fixtures. It would provide an additional barrier between light spillover and the riparian habitat. Planting native shrubs and trees would also provide a habitat lift along the riparian corridor and shade the creek in the summer, reducing creek temperature and improving aquatic habitat.

5.4.3.3 Cumulative Gain from Available Mitigation Measures

Because all proposed available mitigation would be from vegetation enhancement, hydrology through West Tributary and the associated wetland would largely function as before the proposed project. However, additional shading should reduce water temperature and improve water quality. Additionally, because this is a fish-bearing stream in a highly developed setting, these habitat improvements would be important toward improving the overall health of the creek locally and downstream and would fully mitigate any possible project impacts.

Chapter 6
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